

Saturday 24 March 2018

Amateur Photographer



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The art of abstraction

Sandra Bartocha's fresh take on macro photography



Tamron gets the gold

Why we love its new 100-400mm f/4.5-6.3

Rising star How one 15-year-old wildlife photographer is building her career

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Photographer credit: Eren Sarigul



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One of the things that I love about photography is the way it trains us to see the world in a different way. Photographers observe how the light falls; we notice curious juxtapositions and the shapes, patterns and colours in daily objects. It's a 24/7 thing for us – not just when we have a camera. These skills get heightened the minute we attach a macro lens to our cameras. Suddenly

our eyes are drilling down to pick out those little details for a good photograph, be they tiny subjects or the details of larger objects. It's a fascinating perspective. But macro photography is not without its technical and aesthetic challenges, so we've got the experts to show how it's done (page 12). Finally, don't forget to enter APOY 2018 – you'll find the details, plus a free entry voucher code on page 27.

Nigel Atherton, Editor

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ONLINE PICTURE OF THE WEEK



IMAGES MAY BE USED FOR PROMOTION PURPOSES ONLINE AND ON SOCIAL MEDIA © SUBHANKAR DAS

Mount Kanchenjunga by Subhankar Das

Nikon D750, 24-120mm, 2 sec at f/16, ISO 64

This picture of Mount Kanchenjunga was uploaded to our Twitter page using the hashtag #appicoftheweek. It was taken by photographer Subhankar Das. He tells us, 'Mountain Kanchenjunga is the world's third highest mountain peak, and I captured this image during my recent trip to Kaluk, a small village in West Sikkim, India. The morning slanting light falling on the mountain

peaks made the scene heavenly, and I took the opportunity to document the colours on the mountain peaks. Being a visual artist specialising in fine art landscape photography, I always try to represent a scene to the world with my own taste of aesthetic pleasure, thereby trying to make human beings humble and respectful towards Mother Nature.'



Win! Each week we choose our favourite picture on Facebook, Instagram, Flickr, Twitter or the reader gallery using #appicoftheweek. PermaJet proudly supports the online picture of the week winner, who will receive a top-quality print of their image on the finest PermaJet paper*. It is important to bring images to life outside the digital sphere, so we encourage everyone to get printing today! Visit www.permajet.com to learn more.

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CD/DVD Send us a disc of high-resolution JPEG, TIFF or PSD images (at least 2480 pixels along its longest length), with a contact sheet, to the address on page 53.
Via our online communities Post your pictures into our Flickr group, Facebook page, Twitter feed, or the gallery on our website. See details above.
Transparencies/prints Well-packaged prints or slides (without glass mounts) should be sent by Special Delivery, with a return SAE, to the address on page 53.

NEWS ROUND-UP

The week in brief, edited by Amy Davies and Hollie Latham Hucker

Iggy tabletop tripod released

British tripod maker 3 Legged Thing has introduced a tabletop tripod called Iggy. Built of rugged ABS plastic, it will be sold complete with a GoPro mount for £19.99. It will also be available in a kit with the firm's new smartphone mount 'The Cradle' for £24.99.



'Cannibalism is OK', says Canon

Canon is prepared to cannibalise sales of its DSLRs with the new EOS M50 mirrorless model, reports the *Nikkei Asian Review*, quoting the president of Canon Marketing Japan, Masahiro Sakata. The company is currently second in the Japanese mirrorless market with a 23% share, but is bidding to steal top spot from Olympus.

Leather accessories for PEN-F

To celebrate the second birthday of the PEN-F, Olympus has teamed up with French leather makers Bleu de Chauffe to create an exclusive range that includes two bags, one pouch and a strap. This exclusive range will be available through selected outlets with prices starting from £169.99. See shop.olympus.eu and www.bleu-de-chauffe.com for more details.

Manfrotto launches Lumimuse Bluetooth

The new Lumimuse 8 LED has built-in Bluetooth wireless technology. Using the free Lumimuse app on their iOS devices, users will have full control of light output, from 0-100%. The LED comes with three colour filters, a diffuser, standard 1/4-inch thread, static shoe mount and a USB charging cable. It will be available for £129.95.



New addition to Fotospeed's range

Fotospeed has developed a new brand of paper in partnership with landscape pro Doug Chinnery. The Cotton Etching 305 is a textured paper designed to give more depth and detail in prints. To celebrate the launch, a £100 voucher will be hidden in a pack of Cotton Etching 305. Prices start from £32.99. See fotospeed.com.



© VICTORIA HILLMAN

BIG picture

Forgotten Little Creatures, a photographic nature project

Forgotten Little Creatures is the work of scientist and nature photographer Victoria Hillman. The project spans four years of research, observation and photography of plants, invertebrates, amphibians and reptiles, all within a 40-mile radius of Victoria's home in Frome, Somerset.

The aim was to encourage other people

Perez's frogs shed and eat their skin, which is thought to be a way of recycling the skin's nutrients
 Canon EOS 5D Mark III, Sigma 180mm f/2.8 macro, 1/60sec at f/9, ISO 250



to find and understand the importance of the smaller species that usually go unnoticed.

This image of a Perez's frog came about after months of research and observation. This led to the discovery that this frog was eating its own skin: dermatophagy.

The accompanying book can be bought from Victoria's website www.vikspics.com for £20 (unsigned) or £22 (signed), and includes scientific facts about the subjects. Check out Victoria's macro tips on page 14.

Words & numbers

Photography helps people to see

Berenice Abbott

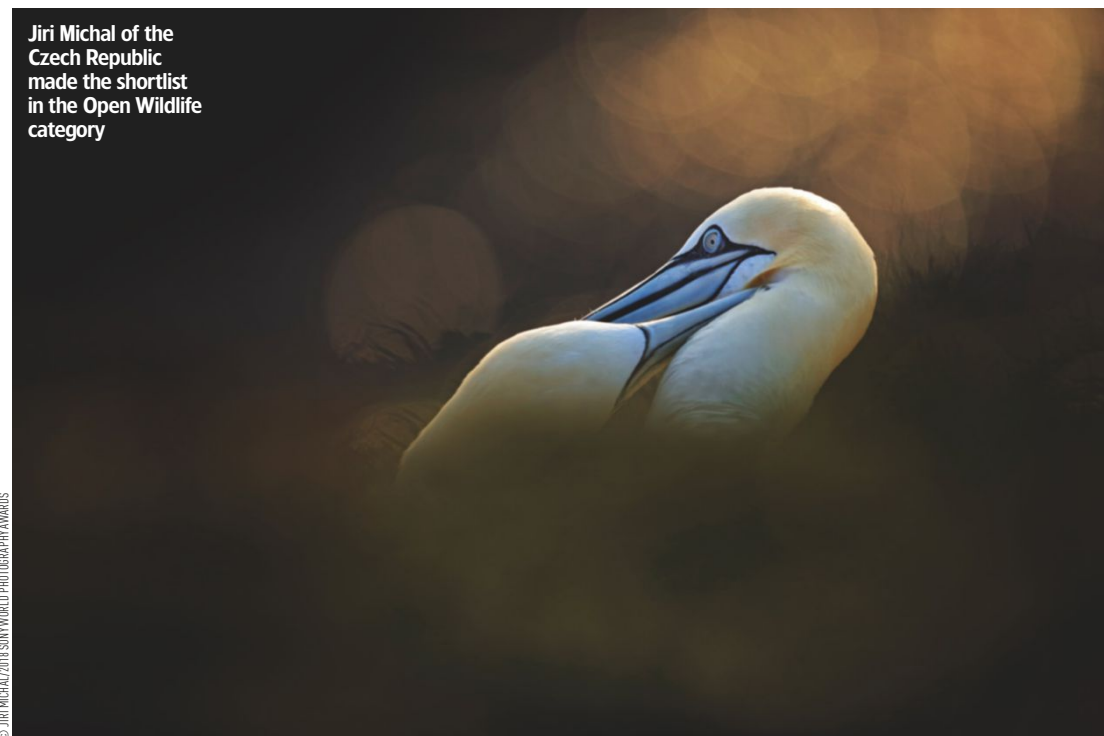
American photographer (1898-1991)

£3,455

Money raised for Forgotten Little Creatures project (exhibition and book) via Crowdfunder

SOURCE: WWW.CROWDFUNDER.CO.UK

Jiri Michal of the Czech Republic made the shortlist in the Open Wildlife category



© JIRI MICHAL/2018 SONY WORLD PHOTOGRAPHY AWARDS

2018 Sony awards shortlist announced

THE SONY World Photography Awards, now in its 11th year with partners World Photography Organisation, has announced its shortlisted and commended photographers for the 2018 competition. Organisers reveal they've had a record number of entries, with a whopping 319,561 images submitted from over 200 countries – a 40% increase over 2017.

The judges say they are impressed with the high quality of entries, and the ability of the successful images to offer insight into the trends and contemporary concerns of photographers working today. The awards comprise four competitions: Professional, Open, Youth and Student Focus.

The Professional competition features ten categories: Architecture, Contemporary Issues, Creative, Current Affairs & News, Discovery, Landscape, Natural World & Wildlife, Portraiture, Sport, and Still Life. This category is judged on a series of works and, according to the organisers, saw an impressive number of entries with some exceptionally strong images, particularly across its two new

categories introduced this year: Creative and Discovery.

The Open competition is judged on a single image and also saw a wide variety of subject matter submitted to its 10 categories, with Street, Landscape & Nature, and Nature receiving the most entries.

The Youth competition saw entries from photographers aged 12–19,



Zongyi Lin's image from the Culture (Open competition) category

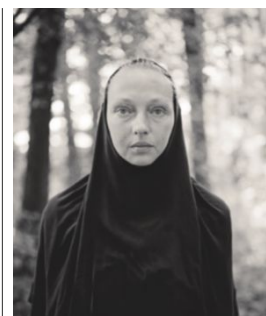
© ZONGYI LIN/2018 SONY WORLD PHOTOGRAPHY AWARDS

based on the theme, Your Environment, with nearly 8,000 more entries than last year.

The Student Focus competition saw applications from universities worldwide. Ten shortlisted students from the UK, India, France, New Zealand, South Africa, Argentina, Canada and China will now go on to produce a body of work, with the chance of winning €30,000 of Sony digital imaging equipment for their university.

All the shortlisted Professional and Open photographers will go on to compete to become category winners, with the chance of scooping the top prize, be named Photographer of the Year and win \$25,000 or Open Photographer of the Year winning \$5,000.

The winners will be announced at the awards ceremony in London on 19 April. Category winners will receive the latest Sony digital imaging equipment and be included in the 2018 awards' book. All shortlisted and winning images will be exhibited at Somerset House, London, from 20 April to 6 May 2018. Tickets are available at www.worldphoto.org/2018exhibition.



© Alys Tomlinson

BJP shortlist revealed

THE SHORTLIST for the 14th annual British Journal of Photography (BJP) International Photography Award 2018 has been revealed. One of the five shortlisted photographers, Alys Tomlinson from the UK, made the cut with her Ex-Voto series of work, which was shortlisted for the 2017 Taylor Wessing Portrait Prize.

The overall winner will be announced on 27 March and will receive a £5,000 exhibition grant and a show at leading London gallery, TJ Boulting, due to open on 13 July. The winner and shortlisted photographers will also be flown to London to attend a networking event at Photo London. They will receive coverage through BJP's channels and be featured in the magazine.



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The new lens is capable of shooting at magnification levels of 2.5x to 5x

Laowa introduces 25mm f/2.8 ultra-macro lens

CHINESE firm Venus Optics has announced an unusual lens for extreme close-up photography: the Laowa 25mm f/2.8 2.5-5X Ultra-Macro. It's designed purely for shooting at magnification levels of 2.5x-5x, well beyond those achieved by conventional macro lenses; in return, it doesn't focus to infinity. The firm says that its relatively short focal length affords greater depth of field compared to longer lenses, which also means macro photographers need to stack fewer frames to achieve extended in-focus detail.

The lens is specifically designed to make it easier

to light your subjects, with an unusual slimline barrel shape and a relatively long working distance from the subject (40mm at 5x magnification). Both the aperture and magnification are set manually using



controls on the lens, while focusing is achieved by moving the camera and lens back and forward relative to the subject. An optional tripod mount will be available.

Measuring 82x65mm, the lens weighs around 400g, and will be available in Canon EF, Nikon F, Pentax K and Sony FE mounts. Its optical construction consists of eight elements in six groups, including a low-dispersion (LD) glass element to minimise chromatic aberration. It's already available for pre-order from distributor UK Optics for £399. See www.laowalens.co.uk.

Tokina shows off two new lenses

TOKINA has shown two new lenses at the CP+ trade show in Yokohama, Japan. Firstly the Firin 20mm f/2 FE AF is an autofocus wideangle prime for Sony full-frame mirrorless cameras. It's a reworking of the existing manual-focus Firin 20mm f/2 FE MF, with a ring-type ultrasonic focus motor and electronic rather than mechanical aperture

operation. It's due to go on sale at the end of May; pricing is not yet known.



Meanwhile the Opera 50mm f/1.4 FF is the first in a new line of premium optics designed for use on full-frame DSLRs. It will feature an ultrasonic focus motor and weather-sealed barrel and should go on sale in the summer.

For the latest news visit www.amateurphotographer.co.uk

Back in the day

A wander through the AP archive.
This week we pay a visit to March 2005



WHAT a timely issue to look back at, given the Sergei Skripal affair. In March 2005 AP was celebrating the Russian Fed range of cameras. This was back in the day when everyone was feeling pretty positive about improving Anglo-Russian relations; how things change... The Fed series of rangefinder cameras started out as rough Leica model III copies – their build is described by then-editor Garry Coward-Williams as 'agricultural' – before the owners branched out with their own styles. Other highlights included a review of the classic Sigma 150mm f/2.8 APO Macro EX DG HSM by the redoubtable Geoffrey Crawley. And former *Stars on Sunday* presenter Jess Yates featured – apparently he was a 'fanatical' amateur photographer. Some of his pictures are a bit disturbing, as befits this complex character – who incidentally wasn't Paula Yates's dad after all, Hughie Green was (younger readers may want to look all this up on Wikipedia).



Former *Stars on Sunday* presenter Jess Yates also featured

Exhibition

Andreas Gursky

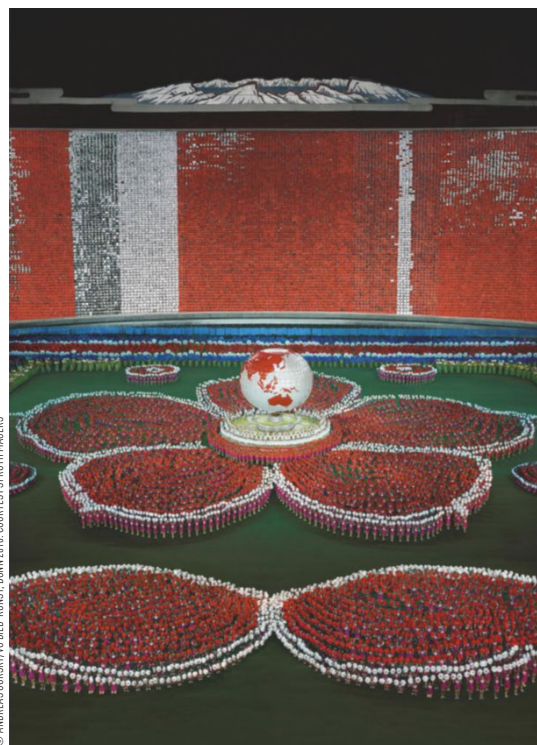
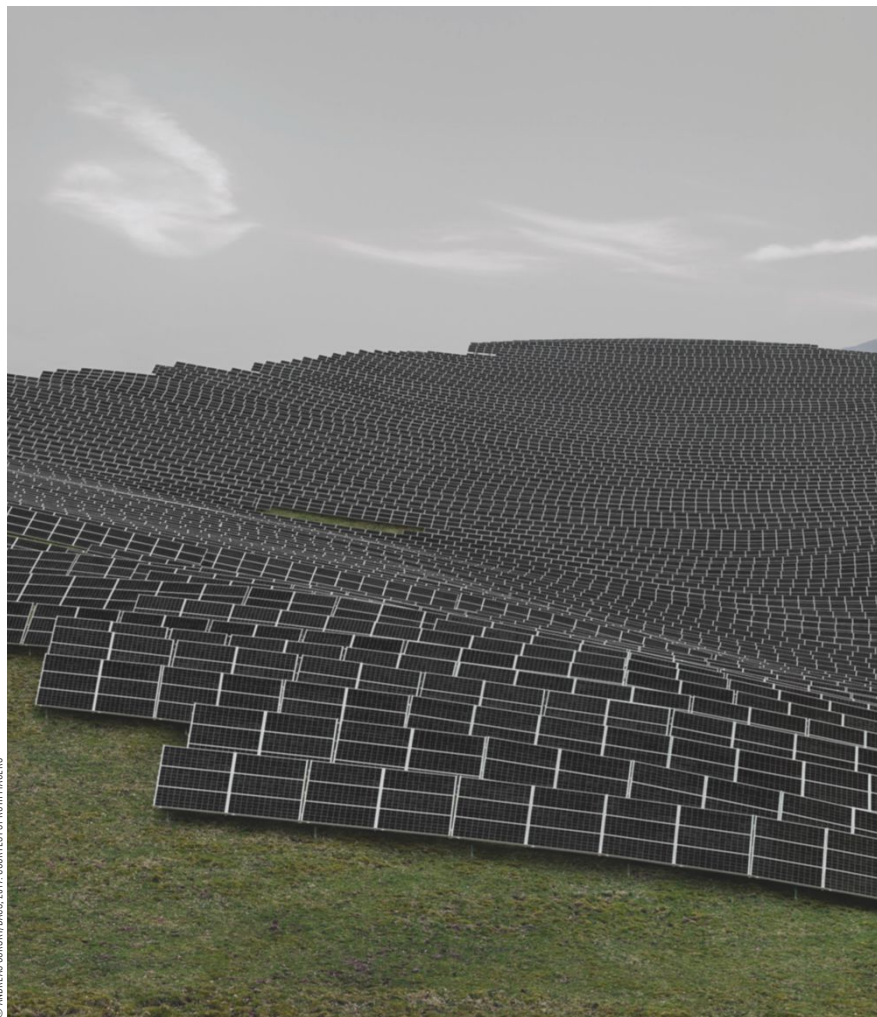
Hayward Gallery,
Southbank Centre

Crossing the boundaries
between reality and fiction
is what Andreas Gursky's
work is all about

'Andreas Gursky'
is on at the
Hayward Gallery,
Southbank
Centre, London,
until 22 April
2018. www.southbankcentre.co.uk

It's hard to mention Andreas Gursky without thinking of his image 'Rhine II', which fetched an incredible £2.7 million at auction at Christie's New York in November 2011. But fixating on this piece of art would do him a disservice. He has been producing thought-provoking work for the past four decades, repeatedly crossing the boundaries between reality and fiction, and asking the viewer to play a pivotal role in the process.

© ANDREAS GURSKY/AGS 2017. COURTESY STRUTH MÄGERS



Pyongyang VII 2007/2017 2

Gursky was born in 1955 in Leipzig, East Germany, and is the son of commercial photographers. From 1970 to 1980, he studied Visual Communication at Folkwang University of the Arts in Essen. He continued his artistic education at the Academy of Art in Düsseldorf where he became a student of conceptual artists Bernd and Hilla Becher. Gerhard Richter taught classes at the Academy, and some of the Academy's students include Thomas Struth, Thomas Ruff, Candida Höfer and Axel Hütte.

Like most photography students at the time his early work was shot on black & white film, but he was soon bucking the trend and shooting colour using a large-format camera. (Gursky began using digital equipment in the 1990s.) Since the late 1980s the artist has focused his attention on sites of commerce, industry and tourism around the world. His images encourage us to question our relationship with the natural world, and the effects of globalisation and capitalism. He also likes to explore how we behave as humans in a collective sense. In 2010 he was appointed professor for Liberal Arts at the Academy of Art in Düsseldorf.

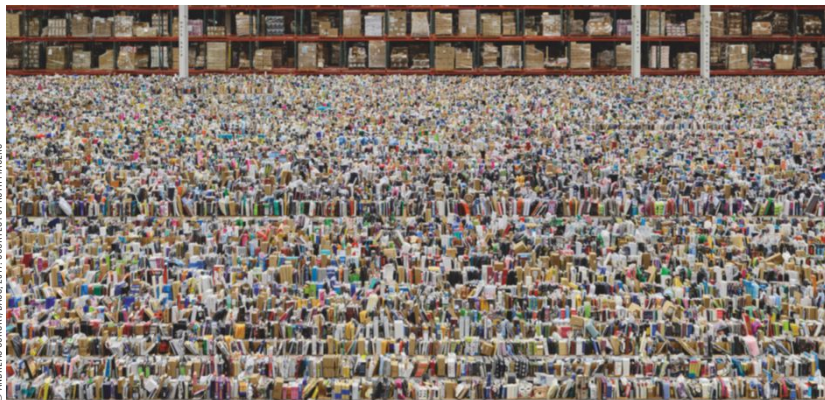
'His work is a comment on image making, and the perfect blend of reality and fiction'

In January this year the Hayward Gallery in London reopened after an extensive refurbishment, and the first exhibition on its calendar is a major retrospective of Gursky's work – the first of its kind in the UK. The show looks at his entire career and features some 60 images including a remastered version of 'Rhine II', and the equally iconic image 'Paris, Montparnasse' (1993), which features all 750 flats in the city's largest apartment block. Hayward director Ralph Rugoff suggests that one of the attractions of Gursky's work is that you cannot take an image in all at once – some of the images are three-metres wide; instead you have to move in close and look at the details.

It's well known that Gursky carries out substantial image manipulation – 'Rhine II' is a good example, as he actually removed several buildings situated on the far side of the river. But he never professes to create a pure document of places or situations. Instead his work is a comment on image



Les Mées, 2016



Amazon, 2016

making, and the perfect blend of reality and fiction. Where this reality ends and fiction begins differs from picture to picture. Gursky has gone so far as to say: 'reality can only be shown by constructing it.' He has recently started experimenting with 'unsharpness', which is an interesting departure when you consider that most of his large-scale works are super-sharp throughout. 'Utah, 2017' is one such example of this new technique.

The scale of the exhibition is impressive, and the revamped space at the Hayward is a fitting temporary home for these, mostly large-scale, prints. For the first

time since the Hayward's original opening in 1968, the gallery's pyramid roof lights allow natural light to flood into the spaces below, showing the artworks at their best. More recent, and perhaps less well known, pieces include 'Untitled XIX' (2015), which appears to be an abstract painting consisting of lines of colour, occasionally broken by blank patches of canvas. This is actually an aerial shot of acres and acres of Dutch tulips. Gursky makes us question what we are seeing, and what the medium is capable of showing us. It's a thought-provoking picture exhibition in a world-renowned space.



Also out now

The latest and best books from the world of photography



© CLAIRE TAKACS

Dreamscapes

By Claire Takacs, Hardie Grant Books, £35, 304 pages, hardback, ISBN 978-1-743-793527



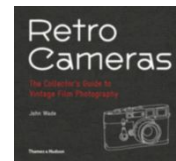
It's been 10 years since Australian photographer Claire Takacs won the overall International Garden Photographer of the Year competition with her beautiful shot of Kenrokuen gardens in Japan, and her passion for capturing the essence of gardens and landscapes

has grown exponentially since. Claire divides her time between Australia, Europe and the USA, and this glorious celebration of her work is suitably diverse as a result. It opens with a portfolio of Cloudehill in Olinda, Australia, the first garden she ever photographed. From the outset it's clear that light plays a major part in Claire's work, and the way she uses it to highlight colour and design elements is wonderful to observe. There are plenty of UK gardens on show, including Great Dixter in Sussex (above) and Hopetoun House on the outskirts of Edinburgh. *Dreamscapes* will delight both photographers and gardeners alike.

★★★★★ Tracy Calder

Retro Cameras: The Collector's Guide to Vintage Film Photography

By John Wade, Thames & Hudson, £18.95, 288 pages, hardback, ISBN 978-0-500-544907



If you're a fan of film-camera guru John Wade's regular articles in AP, then you'll love his latest book.

This beautifully presented tome includes 100 profiles of classic analogue cameras of every type and film format, be it SLR, stereo or subminiature, all from the days before electronics and autofocus were widespread. Illuminated by John's signature top-quality product photography and knowledgeable commentary about each camera, it's not intended to be merely a guide to collectible museum pieces, but also includes useful tips and insights for how to get great photos using these still very usable classics. Whether you're an avid film user, a budding collector, or simply nostalgic for the days when proper cameras were made of metal and focused manually, it's camera geek heaven. ★★★★★ Andy Westlake



Viewpoint Tim Dawson

With more and more photographers expected to provide images for free, the NUJ's Tim talks about the new '#Useitpayforit' campaign

'W'e love your pictures and are really keen to publish some of your work' – it was the kind of unsolicited phone call that any amateur photographer dreams of.

I was still composing my exclamation of delight when the reality check arrived. 'I am afraid that we don't have a budget, so we won't be able to pay you.'

Twenty years ago, such calls were rare; there were hardly any cheap-shot publishers taking a chance. Today, an extraordinary proportion of all published images are not paid for, and professional editorial photographers have had a correspondingly hard time. Hundreds have had to seek out new lines of work.

'Lots of photographers that I know – many of them enormously talented, dedicated professionals – have struggled as a tide of free images has locked them out of markets on which they have depended for years,' says Nick McGowan-Lowe, who represents the National Union of Journalists's (NUJ) 2,000 photographers on the union's National Executive Council.

The #Useitpayforit campaign

Hoping to improve this situation, union photographers have launched a campaign '#Useitpayforit' to encourage talented amateurs and those lucky enough to catch newsworthy moments to seek payment from those who use their photos. They are highlighting individuals who have been savvy enough to charge. Joshua Latchford, for example, was just 17 years old when he snapped a crumpled £200,000 McLaren supercar that came a cropper 10 minutes after its owner had picked up the keys.

He sent the picture to his local weekly paper, offering to allow them to publish it for free, so long as they credited him. Alas, the picture appeared without his name, and the paper syndicated the picture to a third party, ensuring it appeared in several national newspapers and websites around the world. Latchford threatened action and after several exchanges of letters found himself a few

NO FREE RIDES!



Teenager Joshua Latchford earned hundreds of pounds from his snap of a £200,000 McLaren, crashed ten minutes out of the showroom. He won professional photographers' praise too, who say: 'Good enough to publish – good enough to pay for'. Learn more at: useitpayforit.info

#useitpayforit

Joshua Latchford's case is used as an example in the #Useitpayforit campaign

hundred pounds better off. Today where the picture appears, so does his credit.

To help those inexperienced in selling their works, the NUJ has introduced a suite of free guides. At the heart of these are a basic set of rules-of-thumb to ensure that you are not ripped off and get the best price for your work. These link to the union's Freelance Fees Guide and to the Rate For The Job database that details actual prices paid for work going back over 30 years. You can find them all at useitpayforit.info.

'For a lot of jobs, particularly news, it is vital to use a genuinely experienced professional – quite apart from getting the shot, there are legal and ethical considerations that publications require certainty over,' says McGowan-Lowe. 'We recognise, however, that there are great photographers out there who are not professionals, and a lot of moments when someone at the scene of an incident gets the crucial shot. If more of these people charged, it would halt the tide of images offered for nothing, crowding out those by photographers who demand a fee.'

For myself, I politely declined the flattery of the budget-less publisher. Only occasionally have I been paid for my photography. Receiving even a modest fee, however, feels so much better than fretting that the publication of my pictures illustrates only how little I value them.

Tim Dawson is president of the National Union of Journalists. He has worked as an editor, reporter and feature writer for national newspapers for the past 20 years. See his work at www.nujpresident.org.uk.

Do you have something you'd like to get off your chest? Send us your thoughts in around 500 words to the address on page 53 and win a year's digital subscription to AP, worth £79.99

In next week's issue

On sale Tuesday 27 March



Seers of scenery

Experts from the *Masters of Landscape Photography* book share their skills and wisdom



Stars of the show

Andy Westlake rounds up all the new gear released at the CP+ 2018 trade show

Small wonders

John Wade tells us all about the Minox subminiatures from the 1930s to 1960s

Sweetness and light

Get great child portraits with Rotolight LEDs – James Paterson shows you how



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14th April	Station Road, Montpelier, Bristol
21st April	4-6 Boucher Plaza, Belfast
28th April	100 Hagley Road, Birmingham
5th May	3 Tennant Street, Edinburgh
12th May	Frenbury Estate, Norwich
19th May	Downing Street Industrial Estate, Manchester
26th May	Oakbank Industrial Estate, Glasgow

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Mastering macro

Macro photography proves that small is beautiful, and is a wonderful way to reveal the intricacies of flowers, insects and other subjects. Three experts show you how

Ross Hoddinott



Ross is one of the UK's leading outdoor photographers. He is a multi-award winning artist and the author of eight books. Ross has been an Ambassador for

Manfrotto and Nikon UK. Visit www.rosshoddinott.co.uk.

Insects and bugs

LITTLE critters have always fascinated me. I've been shooting insects since I was 10 years old, using inexpensive close-up filters at first to enable me to achieve frame-filling results. When I was 11, I won BBC's *Countryfile* inaugural photography competition with my photograph of two emperor dragonflies. I enjoy capturing the exquisite beauty, intricacy, shape and form of insects. I favour natural light and photograph my subjects in situ in the wild to cause minimum disturbance. I authored the book *Digital Macro and Close-up Photography* and have won awards in competitions such as Wildlife Photographer of the Year, British Wildlife Photography Awards and International Garden Photographer of the Year with my close-ups of insects.

1 Get up early and stay out late

Insects are at their least active and most approachable early in the morning and late in the evening, when their bodies are cool and they are generally settled. Butterflies will roost among tall grasses or on flowers, while damselflies and mayflies will settle among reeds close to water. Tread and search carefully. Once you've located a suitable subject, you should be able to get within the best distance to take a picture relatively easily. You may even be able to set up a tripod, which will greatly aid with framing and focusing.

2 Keep it simple

In all my years of experience with shooting wildlife, I've found that the best insect close-ups are simple in their construction. To help your subject really stand out, opt for a clean, diffused backdrop, free of clutter or distraction. You could photograph insects with distance between them and the surroundings: for example, select an angle where you can contrast them against sky, water or distant foliage. Also, set the largest practical aperture to help throw your subject's surroundings attractively out of focus.



KIT LIST



◀ Telephoto macro

A telephoto macro is ideal for insects. 100mm and above will generate a larger working distance from the subject and minimise the risk of disturbing your subject.

▼ Small LED

Small LED devices, like Manfrotto's Lumimuse range, are great lighting aids. They can be camera-mounted or handheld. With a continuous light source, you can preview the effect before triggering the shutter.



▼ Geared head

The design and type of tripod head you use is down to personal taste, but personally I favour a geared head for close-ups. They allow you to make very precise micro adjustments to composition, which suits the fiddly nature of close-up work.





3 Maximise depth of field

Depth of field is inherently shallow at higher magnifications. To help maximise the zone of acceptable sharpness (for any given aperture) try to keep your camera parallel to your subject. Why? Well there is only one geometric plane of complete sharpness, and you will normally want to place as much of your subject within this plane as possible. If you hold your camera at an angle in relation to your subject, wing tips and tails will quickly drift out of focus.

7 Capture behaviour

Try to capture elements of insect behaviour.

Dragonflies are difficult to capture in flight, but it can be possible using a long telephoto and shooting continuous bursts with a fast shutter. Mating butterflies and damselflies add symmetry or shape to compositions. In the spring, you'll find damselfly larvae clinging to reeds by the water's edge and hatching into their adult form. Close-ups of dragonflies or spiders devouring prey can also be fascinating.

Marbled White butterfly
(*Melanargia galathea*) in
the evening light, Dunsdon
Nature Reserve, Devon

4 Use backlight

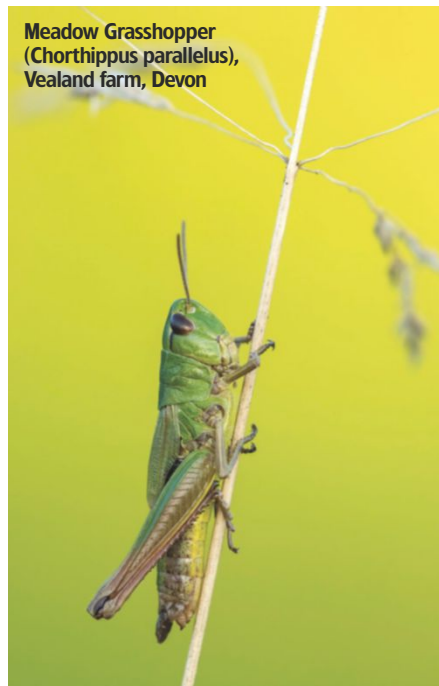
Backlighting really suits insects, as it tends to highlight their form, detail and intricacy. It particularly suits the translucency of butterflies. Low early-morning or late-evening light is perfect for shooting backlit subjects – the light's quality is warmer and softer too. Position yourself carefully, so you sandwich your subject between the light and your camera. TTL metering can be fooled in tricky light, so check your histogram and apply positive exposure compensation if images are underexposed.

'Try to photograph insects within days of their emergence'

5 Pristine subjects

In close-up, even the smallest imperfection will be highlighted. Therefore, it is normally advisable to only photograph insects that are in pristine condition. Butterflies lose some of their vibrancy and wings tend to get damaged as they near the end of their adult stage. Try to photograph insects within days of their emergence. By researching the life cycle of potential subjects, you can plan to visit suitable habitats at the right time of year.

Meadow Grasshopper
(*Chorthippus parallelus*),
Vealand farm, Devon



6 Stalking subjects

During the day, when it's warm and insects are busy, shoot handheld. It can be frustrating stalking insects, so be patient and persevere. When you move into position, try not to disturb the surrounding vegetation, and avoid casting a shadow across the subject. Increase ISO to generate a sufficiently fast shutter to eliminate camera and/or subject motion. I would recommend a minimum speed of 1/250sec when working handheld in close-up.

Female emperor dragonfly
(*Anax imperator*) laying
eggs on garden pond in
Broxwater, Cornwall





Victoria Hillman

Victoria Hillman has a BSc in Zoology with Marine Zoology and an MSc in Wildlife Biology and Conservation. Photography was a hobby but soon aided her studies. She is fascinated by plants, invertebrates, amphibians and reptiles. Visit www.vikspics.com

Amphibians and reptiles

I AM self-taught as a photographer, learning how to make the most of my equipment and available light as I go along. Ethical, truthful and responsible photography is something I feel very strongly about, making the welfare of my subject and its habitat my priorities. I am very careful to cause minimal disturbance to both my subjects and their habitat. I never move or garden around my subjects, and everything is photographed where I find it. I will spend weeks, months and even years with just a handful of subjects, learning as much as I can about them and how they interact with their habitats. This has allowed me to capture both close-up and wider in-habitat images. I rarely use additional light, but when I do I prefer a soft constant light to flash, and only apply the light as I take the shot, removing it straight afterwards.

1 Understand your subject

Carry out research into the best time of the year and day to photograph your subject. Reptiles are creatures of habit and generally use the same basking spots, basking in the early mornings. Amphibians tend to use the same breeding ponds year after year and are most active in damp conditions and at night.

2 Concentrate on composition

Amphibians and reptiles have beautiful and intense eyes so make them your focal point. Try composing with your subject off centre for a different perspective, and photograph at eye level. To give your subject more context and create a more complex image that tells a story, look at incorporating the surrounding habitat.



3 Shoot portraits and behaviours

Frame-filling portraits can be eye-catching and striking, but amphibians and reptiles also have some interesting behaviours and patterns. By understanding your subject you can increase your chances of capturing these behaviours and achieve close-up images of eyes or skin patterns and show something that most people won't see.



Common toad (*Bufo bufo*) mating ball, one of three in this breeding pond. Unfortunately the female was long dead, but the males are so intent on breeding they don't notice



‘The lack of colour can add more drama and impact to some images’

4 Use colour or black & white

Try experimenting with both colour and black & white images. Although reptiles and amphibians have some wonderful colours, by using black & white you can really draw the viewer's eye into the subject's finer details, patterns and behaviours. Also the lack of colour can add more drama and impact to some images.

5 Be respectful and responsible

The welfare of your subject should always be your priority. Do not disturb or move them to clearer areas as you may cause stress and interfere with important behaviours. Photograph from a respectful distance and where you find them. You will be rewarded with natural images of your subject.



6 Think about lighting

Personally I don't like to use flash as it can startle the subject and look unnatural. Instead I use natural light as much as I possibly can. In some situations when I do require additional light, I will use a soft constant LED light with a diffuser from a distance as a fill-in light.

7 Choose ISO carefully

Use as low an ISO as you can get away with. This will be dependent on what you're shooting, the lighting, and environmental conditions. Experiment with using wider apertures to blur out some foregrounds and backgrounds, thus drawing the attention to your subject. Ensure your shutter speed is fast enough to freeze the action.

KIT LIST

Macro lens ►

Most of my work is taken using a Sigma 180mm macro lens, but I will use longer lenses when required, especially when photographing snakes.



Tripod ►

I use a Manfrotto 190 Go! for my amphibian photography so that I can achieve the low angle needed. I also tend to shoot my reptile photography hand-held to limit disturbance.



Lights ►

I use small and larger LED lights, with one but normally two different diffusers to soften the light. I use them on low-power settings.





Sue Bishop

Sue Bishop specialises in flower and landscape photography, and is the author of three books. She has exhibited her work many times and sold her images worldwide. In 1994 she and Charlie Waite founded Light & Land. Visit www.suebishop.co.uk.

Flowers

IF I WAS allowed to keep only one of my lenses, it would have to be my macro lens. It's a Micro Nikkor 105mm and probably my oldest lens – so old that it doesn't have any new-fangled features like vibration reduction. But the reason why I love it is that it allows me to see things in a completely different way. As an adult you probably wouldn't choose to lie flat on frosty ground to look at a crocus. Add a macro lens into the mix and perhaps you would – just to see each delicate crystal of ice on the petals. It's a whole new world of beauty!



1 Use a tripod

I always use a tripod if possible, as it helps with very precise focusing. It also means that you can really fine-tune your composition. For very low-growing flowers, use of a tripod can be awkward. So I usually lie flat on the ground and brace myself on my elbows.

2 Group shot

It's always lovely to photograph one flower with others of the same type in the background, using a wide aperture to throw them out

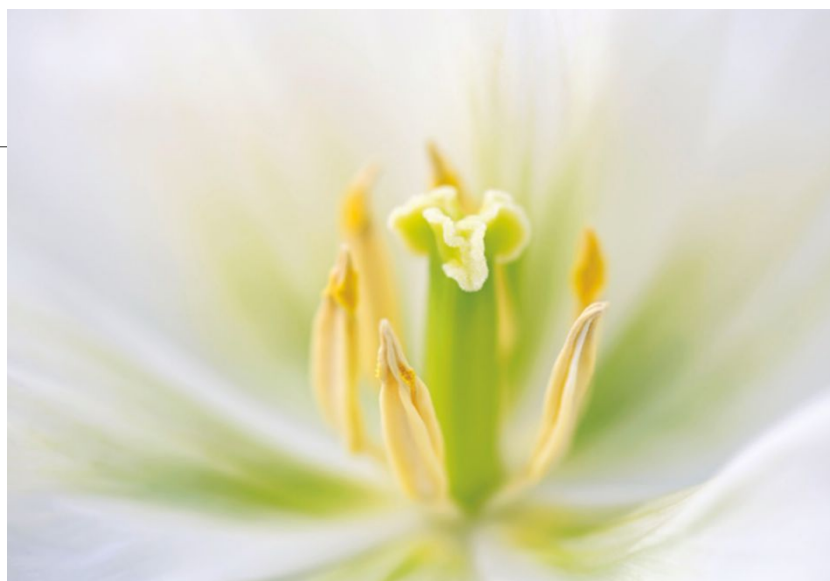
of focus. They support the main subject in terms of colour and shape, but are soft enough not to distract from the main flower.

3 Light conditions

Very often the best light for photographing flowers is bright and overcast. Because the light is diffused by high white cloud, it doesn't create any shadows. If you do photograph on a sunny day, using a reflector will help to boost the light on the shadowed side of the flower.

4 Creative cropping

It's also fun to photograph just part of a flower, cropping right into it so that the petal edges are cut off. Make sure though that your crop looks definite enough to come across like it is obviously intentional – if you only crop off a couple of petal tips, it might just look like a mistake.



KIT LIST



◀ Close-up lens

If you don't have a macro, try a close-up lens. They screw onto the front of a lens like a filter and reduce the minimum focusing distance of the lens. They are inexpensive and a great introduction to macro photography.



◀ Reflector

The smallest Lastolite reflector is big enough for flower photography, or I even use just a piece of white card. A diffuser can be useful if the light is really harsh.



▲ Tripod

This helps me to take time over my composition as well as focus precisely. I also use a cable release to avoid moving the camera when I press the shutter button.

Shooting in close proximity to your subject will reduce the depth of field significantly

5 Focus manually

When you are working on close-ups, your depth of field will be very shallow, especially at your widest aperture. So it's important to decide exactly which part of the flower you want to be sharp. To achieve this, manual focus is best, and live view can help you check that you've got it perfectly right.

'If you fill the frame with your flower, you won't have to worry about backgrounds'

7 Viewpoint

Think about your viewpoint. It's often good to get down to a flower's level and approach it from the side, rather than looking down on it from above. Look through your viewfinder as you move around – every tiny change in your angle to the flower will affect the image radically.



6 Consider your backdrop

If you fill the frame with your flower, you won't have to worry about backgrounds. But if there is a background in your image, make sure it isn't distracting. Avoid bright colours, especially if your subject is a paler colour. If the background is messy, use a wide aperture to throw it out of focus.





© MARTIN PARR/MAGNUM



© SEAN GALLAGHER/GETTY IMAGES

Martin Parr

Now a pillar of the art establishment, Parr has sparked a lot of controversy

Martin Parr is so influential today, he's inspired an adjective: Parr-esque. His unique brand of social satire and wry observation, often focusing on mass culture, British idiosyncrasies and the tourism explosion, is widely emulated. So why has he turned out to be such a seminal artist?

Parr was born in 1952, in Surrey, England, the son of a civil servant. While not particularly academic, Parr

was passionate about photography and went to the then-Manchester Polytechnic to study the subject in 1970. During this time, he became very interested in the new wave of documentary and 'real life' photographers emerging in the USA – Garry Winogrand, Lee Friedlander and other key influencers featured in the magazine *Creative Camera*. Parr also admired the work of British photographer Tony Ray Jones. Unlike earlier social documentary photographers

in the humanist tradition, Parr was less about changing the world and more about recording its banalities, contradictions and crassness.

Birth of the Parr-esque

Parr really found his voice in the 1980s, using his trademark Plaubel Makina camera, wideangle lens and flash to capture detailed, strongly lit images in colour – something quite adventurous for a serious documentary photographer at the time. The new affluence of the Thatcher era proved to be fertile subject matter, along with the dogged survival of the British class system and food as a signifier of social change. *The Last Resort* (1986) is a classic example, prompting accusations that Parr, who came from a privileged background, was belittling his working-class subjects. Parr aficionados strongly refute such claims, pointing out his equally merciless, Hogarthian

depictions of middle and upper-class pretence. The arguments became heated, and Parr managed to scrape into Magnum Photos by one vote. 'Magnum photographers were meant to go out as a crusade... to places like famine and war,' he later reflected. 'I went out and went round the corner to the local supermarket because this to me is the front line.'

All this is water under the bridge now, and Parr is very much part of the British art establishment. He isn't a parochial photographer, though, and travels all over the world, chronicling the rise of mass tourism and social change, or just having fun. He is also an avid collector of photo books and opened an eponymous foundation in his adopted home town of Bristol, with the goal of supporting up and coming photographers. The Parr brand goes from strength to strength. AP

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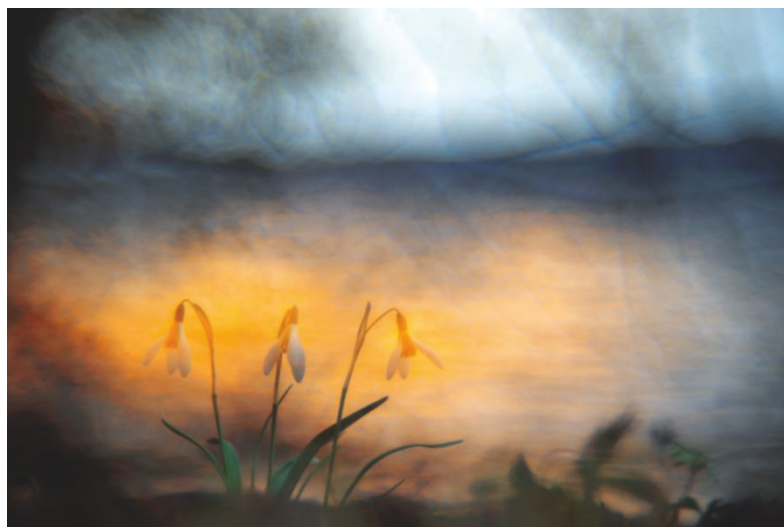
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Spring forward

The dream-like plant images popularised by **Sandra Bartocha** are often copied but never bettered. **Keith Wilson** hears how she is looking for a new direction



There is probably no better example of the photographic potential to be realised from one's local area than the work of Sandra Bartocha. Nearly seven years after her breakthrough success as a category winner in the Wildlife Photographer of the Year competition, Sandra continues to make frequent trips to the shores of her local lake in Mecklenburg, northern Germany, where she took her prize-winning picture of snowdrops against the golden surface of sun-reflected water (see above). Much has happened since then: exhibitions, judging duties, the publication of *LYS* – arguably one of the best nature photography books of the decade – workshops and yet more awards, but still Sandra returns to her local lake for inspiration, particularly during

spring, her favourite time of the year. 'I think that everybody needs a place where he or she feels at home and where they are constantly returning,' she says. 'I have this little multi-visual show and people who grew up with me in my home town say it's funny because 80% of what's shown is taken at this one lake shore.' It's February when we speak and although Sandra's schedule is taking her to the rugged shores of Lofoten in March, she is looking forward more to shooting the early spring flowers at home. 'From March you can find all kinds of different flowering periods because the limestone is facing west, so you always have light and you always have water in the background and you have all the spring flowers, so I return every year with the aim of producing images that I have not done before.'



Above left: Sandra's beautiful image of snowdrops against sun-reflected water wowed the judging panel of Wildlife Photographer of the Year 2011

Bubble bokeh

Another key component of Sandra's success in 2011 was her technique and choice of lens. Explaining how she took her prize-winning image, she said: 'I took an in-camera double exposure, with one sharp exposure and one much softer one, so the scene would appear as dreamy as it felt.' Her lens choice was unusual at the time, a Meyer Optik Görlitz Trioplan 100mm f/2.8 macro, also known as the 'soap bubble' lens because of the bokeh it generates. The combination of this 15-aperture blade prime lens, based on an early 20th century design, and Sandra's soft focus technique has inspired hundreds of plant photographers. Many have mimicked her style, some successfully, so does she feel flattered by this, or has it become an obstacle to her future path?



Above: A triple exposure of a beech forest. The fog helps to create an interesting pattern in the overlay

‘On the one hand it is flattering,’ she says, ‘but on the other hand it’s definitely an obstacle because I see people are getting tired of that style.’ To support her observation, she cites the response of fellow judges to entries clearly influenced by the technique she popularised. ‘I’ve been on many competition juries judging plant categories and as soon as there’s a flower with bokeh background they say, “No! We’ve seen that.” I’m regretting it a bit because I still think that they have their value and they are still beautiful.’ Fortunately, the views of her fellow competition judges have not put her off entirely, although she does admit to using the Trioplan 100mm ‘just 2% of my time now’. Sandra didn’t feel she was inventing anything new at the time, she was simply finding a way to convey the emotions she felt while enjoying the

outdoors and drawing inspiration from her surroundings. ‘I never saw myself as a role model in any kind of photographic journey; it’s more like I’m happy to do it and I’m still happy at the results, but my inner self is not progressing enough.’

An intimate journey

In 2016 Sandra and fellow photographer Werner Bollmann published *LYS: An Intimate Journey to the North*, the culmination of four years of dedicated coverage of the landscape and natural history of Scandinavia from the pastures of Jutland in the south to the frozen frontier of Svalbard in the Arctic. In total, Sandra and Werner spent around a year on and off the road, attempting to capture the essence of these landscapes in all their moods, in every season, up close and from

afar. The book was widely acclaimed and the exhibition continues to tour across Europe. Shooting images for *LYS* represented a challenge for Sandra as she had to adapt to a style that didn’t immediately reflect her natural instincts. She explains: ‘With *LYS*, we tried to go away from the fancy stuff a bit, not playing around too much, not making double exposures and moving exposures (intentional camera movements), but to go back to the classic way of seeing the world and producing timeless pictures. I really liked that approach, to just go back to the core of what is out and to try to capture the essence of what’s in front of you. I really do enjoy both ways of seeing the world, it’s just that they don’t fit together too well.’

After four years devoted to such a demanding project, and



➤ the logistical challenges of editing images for a book, exhibition and multimedia presentation, Sandra admits to struggling to find a new sense of purpose. ‘I was in the midst of this project and I was very focused. Now it’s finished, I’m a bit lost,’ she reflects. ‘I know what I have to do, I know when I’m out I can create nice pictures, but people seem to be repeating all the same stories, again and again. I just don’t want to add to stuff that’s been done before.’

Managing expectations

As much as Sandra likes being outside photographing early spring flowers for no other reason than to enjoy the moment, she is conscious of the expectation of others as they look to see what she will be showing next. ‘I’ve been invited to a landscape conference and I’m currently preparing what I’m going to talk about. Even this makes me think, what is it I’m about right now? What do I stand for, what are my goals, what’s most important? People still refer to me as a plant photographer – I enjoy it, but when I started it was not as popular as it is these days, and you can’t relax on the status of the past; you have to get going and produce new stuff.’

All that said, Sandra says there has been another project taking shape and now perhaps she has the time to develop it further. She reveals: ‘I wanted to do a book about the seasons. I’ve been

LENS CHOICES



TODAY, Sandra only occasionally uses her Meyer Optik Görlitz Trioplan 100mm f/2.8 macro lens. She is more likely to reach for the Micro-Nikkor 105mm f/2.8 macro, the Nikkor 24-70mm f/2.8 zoom, or one of three tilt-and-shift Nikkor lenses – 24mm f/3.5, 45mm f/2.8 or 85mm f/2.8 – with her recently acquired Nikon D850. ‘The 85mm tilt and shift macro lens has a magnification factor of 1:2, so Sandra uses it for images of forest floors or stones, where she can move in close without compromising on sharpness. Her next favourite lens is the Nikkor 80-400mm f/4.5-5.6 zoom. ‘This is a very versatile zoom,’ she explains. ‘It’s very good quality for the flexibility I get because I like the compression of 400mm, even for flower and macro work.’



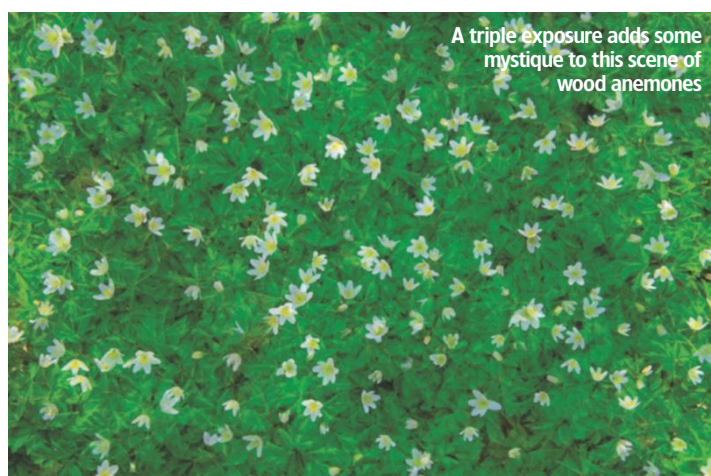
planning this for many years and I already have a foreword and some poems by people prepared. I have to find the time to edit the pictures and make it into a little book.’ After the epic undertaking of *LYS*, a ‘little book’ seems like a step in the right direction for the attainment of new goals. It’s also easier to

Above: Sandra loves to create texture by blending multiple frames together. This image of a rowan tree comprises 10 exposures

accommodate with her need of making regular returns to familiar locations, subjects and themes – her local lake, spring flowers and the seasonal changes on the woodland floor. ‘It’s just fascinating how the seasons play within a wood,’ she says, ‘With different undergrowth from time to time, it just changes so



A coastal forest with strong backlight. By overexposing the scene slightly Sandra emphasised the shadows



A triple exposure adds some mystique to this scene of wood anemones

much. Nature photographers shoot during the spring and autumn because of the colours and then maybe in winter when there's snow, but summer is often neglected. It's absolutely fascinating to be in a forest in the summer because you understand why nothing is growing in a beech forest, for example, it's pitch dark in there.'

Favourite flower

But there is spring to enjoy first and Sandra knows exactly which flower she will be looking out for by the lakeside in Mecklenburg: a little purple perennial called Liverwort. Common all over central and northern Europe, Sandra has photographed it hundreds of times already. 'It's my favourite flower,' she admits. 'It's so over-photographed but it's just so beautiful and elegant and for me it marks the start of spring. It's the first flower that appears in our forests, and I have to photograph it every year.'

It now seems a good time to ask her about the steps she follows when making one of her dream-like photographs, and for her advice to anyone who wants to improve their macro photography. 'I think first you need to find the right spot,' she

Above: It was the light dancing in the background that fascinated Sandra when she was shooting these liverleaves



Sandra Bartocha was born and raised in Mecklenburg, Germany, and graduated in media studies and English from Potsdam University. She is vice president of the German Society of Nature Photographers (GDT) and editor-in-chief of their GDT magazine – *Forum Naturfotografie*. Her book, *LYS: An Intimate Journey to the North* (with Werner Bollmann) can be ordered here: www.lys-publishing.com/en/

replies. 'You have to find a spot where you can be flexible with light and with the background. Finding the right spot includes paying attention to which plant you are photographing. If you have a forest floor of anemones then look for the one that is intact, that's not beaten up, hit by the rain or nibbled by an insect. Then, of course, nothing beats getting down as much as you can, especially for macro work with very small subjects, getting really close and almost under the ground.'

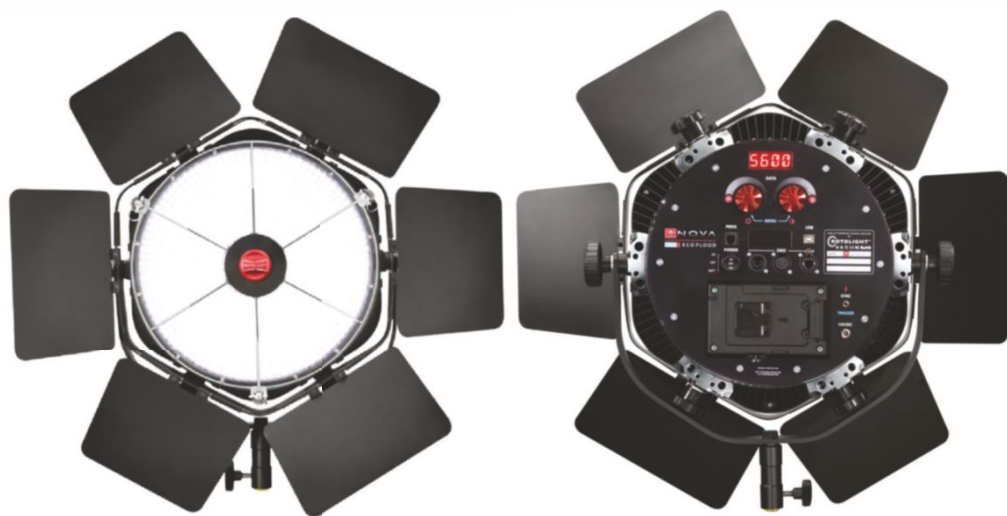
So you've got to be prepared to get dirty, then? I ask. She laughs: 'Yeah, you have to get dirty, that's for sure! So, wear clothes that make it easy for you to get dirty!' She continues: 'Then pay attention to the light and the composition. I'm always seeing this in workshops: people are not paying attention to the smallest things, because with macro every millimetre you move changes the picture tremendously. Look for how the light is hitting the subject and how the composition is changing.'

Tripod? What tripod?

When it comes to making a list of the macro photographer's essential kit, a tripod is mentioned virtually in the same breath as a high-quality

macro lens. But here again, Sandra is happy to break with convention. 'I'm not using a tripod for this kind of work because it's too clumsy to change the composition,' she declares. 'Also, I'm destroying more of the surroundings I'm in because I'm trying to adjust it, so I think I'm much more flexible working without these things and especially with the high ISO capabilities now available. Even if it's getting dark you can boost the ISO to take the picture without any stabilisation.'

She makes an exception for landscapes, however, when she will use a tripod '100%' of the time. But she is quick to acknowledge that there is more to macro photography than her own indomitable style. 'But, of course it depends on the direction you go with your macro work. If you want to do all this focus stacking then of course you need a tripod, but for my kind of photography where I'm really focusing on the light and the emotion and limited depth of field, no tripod is needed and it's much easier to compose with a really nice background without [one].' In other words, find your location, subject and background, get down low, and get dirty.



Why I swapped flash for LED

Celebrity photographer **Mark Mann** explains why he ditched his strobes in favour of the Rotolight Anova PRO 2

New York-based celebrity and advertising photographer and film-maker Mark Mann owes his career to a stranger he met on a train from his childhood home in Glasgow when he was still at school. 'I was on my way to the Edinburgh Festival and met an older lady – the most beautiful older woman in the world,' he recalls. 'She was probably about 18.' They got talking and it turned out that the girl was studying photography at Manchester Polytechnic. 'I got back from the festival and decided I was going to go to Manchester Poly too, so I could do

photography and see her. True story! Although there was no romance, I did actually see her there and we became friends.'

Today Mark spends his time working with A-list celebrities like Benedict Cumberbatch and Martin Scorsese, and because he shoots both stills and video he needs one set of lights that can do both.

Quality and versatility

'I used strobe for a long time for my stills photography but was always interested in the idea of being able to use the same continuous lighting for everything,' he says. 'I'd tested a few continuous lighting panels, but I never really liked

the feel or the versatility of them until I discovered the Rotolight Anova PRO.'

The Anova PRO (and now the Anova PRO 2) is the big brother of Rotolight's award-winning trio of lights, which also include the AEOS and NEO 2. They are the world's first continuous LED studio lights to incorporate High Speed Sync flash (HSS) with no recycle time, and electronically adjustable colour temperature.

As well as the practicality of having lights that are versatile enough to be used for multiple purposes, Mark also likes the quality of the illumination that the Rotolights produce. 'I shoot exclusively with Leica, so my shots are very, very sharp. I was looking for a light that would keep the detail but be less sharp in terms of lighting. Friends had suggested continuous lighting, but I never liked HMI's as they didn't give me enough light, and I don't like lights that get hot. With the Anova PRO there's something about the "slowness" of the light mixed with the quality of the Leica; it's absolutely beautiful. It gives you a filmic feel.'

A key feature of the Rotolight range is the ability to dial in a precise colour temperature,

Gillian Anderson



Benedict Cumberbatch

and use that for either flash or continuous lighting. 'With strobe I'd put a warming or cool filter over the flash, but that isn't necessary with these. Often when you're using strobe you're not seeing what you're gonna get when you look through the viewfinder, and you're anticipating what the shots are going to look like. So to actually look through my screen and know that this is how the colour and light are going to fall allows me to get to where I need to be a lot quicker.'

A beautiful workhorse

Mark now exclusively uses the Anova PRO 2 and smaller AEOS for all his work, and finds that they have improved his workflow, especially in situations when he's shooting



Mark Mann (left) poses with Jack Black



Alan Cumming



Geoffrey Rush



Martin Scorsese

portraits on location at film festivals. 'At these events I'm working in a fairly confined space and have a really high turnover of people so have to work fast, and Rotolight has been perfect for that. What's fantastic about the LEDs is that they don't give off any heat; so people don't come in and start sweating within seconds.'

In Mark's business it also helps that Rotolights are striking to look at. 'When you shoot people who haven't been in a studio much then it's all new to them and they

are impressed. But the type of people I shoot have seen it a 100 times, so having something different like the Rotolights – which are beautiful to look at – is great. People come in and go "Wow, what's that?" and it creates a conversation. At the Sundance Film Festival I photographed a lot of directors, and they were very interested in the lights.'

Mark usually uses three or four Anova PRO 2s, but the set-up varies. 'I'm photographing a lot of different faces, types of people, skin tones, ages, etc.,

often very quickly. One light set-up doesn't work for all. You may have a woman of a certain age, so you need a softer light with not too much side light across her face.

'But then if you have someone with a very interesting face and you want to show that, you can move the light to wherever you want it to get the desired effect. Being continuous they're easy to set up. I tend to use a fill, key and shadow fill. But I love the fact you can join them together. At Sundance I used the Anova Hex Ring (seven

Anova PRO's joined together), and it was incredible. But I do a lot of rim lighting too and it's really nice putting three on top of each other.'

What impresses Mark the most is the quality of the engineering. 'The reliability and quality of a product are very important to me and the Rotolights over the last couple of years have been incredibly reliable. They've never broken, and I'm not exactly gentle with my gear. Rotolight also has fabulous customer service if I have any questions.'



Mark Mann at work in his studio with the Rotolight Anova PRO

MARK'S KIT

Mark has been using the **Rotolight Anova PRO** for a couple of years (and now the Anova PRO 2) but recently added the new, smaller AEOS to his kit. 'It's superlight and the handles make it really great for location work,' says Mark. His cameras of choice are the Leica S medium-format system and Leica M240. 'The results from Leicas are incomparable to other brands,' he says. 'My favourite camera though is a 1940's Graflex Super B that I call Meredith. I love using it as it slows you down, shooting one 4x5 at a time.'

For more information, visit www.rotolight.com



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LETTER OF THE WEEK

Josh has achieved a lot since taking up photography



Josh's story

Thanks for the excellent feature 'Photography can save your life' (AP 24 February), specifically the part on Matt Doogue and his macro work. Matt has been an inspiration for me and Josh, my 15-year-old son, for some time and he has given tremendous support to Josh who suffers with Tourette's syndrome.

Josh started wildlife photography with me about four years ago and his Tourette's symptoms were significantly reduced while he was using the camera. It all started with having an image shown on BBC's *Springwatch*. This led us to enter the 2016 BWPA where he was highly commended.

We entered him into the 2017 RSPCA Young Photographer Awards where he won both 3rd place and the overall 1st place in the 12-15 category. He has spoken and received online support through social media from Matt, and seeing how others cope with mental health issues too is great for him to see.

Josh has set his heart on photography as a career and his school wholeheartedly supports him: he has galleries displayed in the school and is enrolled on a course where his photography will be used to gain his GCSE. His Instagram account, which he created and promoted by himself, has over 1,280 followers.

Josh also received a grant from Tourette's Action to help fund equipment for wildlife photography. He has been featured in local magazines and local newspaper articles, and recently took part in BBC Radio 4's Tweet of the Day segment (about short-eared owls) – his details were passed to the BBC by our local wildlife trust, who we didn't even know were aware of Josh. **Lee Myers**

Amazing work, Josh. Do stay in touch and let us know of future successes – Geoff Harris, deputy editor

Win!

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Printer feature feedback

Your review of an Epson printer (AP 3 March) reminded me of my experience with my Epson P600 compared with my general use Brother printer/scanner. If the Brother has a blocked nozzle (very rare) the nozzle clean function asks which colour hasn't printed correctly and then cleans only that colour's nozzle, thereby avoiding wasting the other three inks.

The P600 purges all eight colours even if only one nozzle is blocked. I think is another Epson trick to make more money. I can see no reason why Epson, who now claim to be environmentally aware, could not do the same as 'little' Brother and issue a firmware update to correct this seemingly criminal waste of ink plus the extra tanks and packaging that it causes. And let's not forget the cost!

Clive Pearson

Isn't it about time that printer manufacturers like Canon, Epson, HP etc were brought to book over the extortionate cost of their inks? In his review of the Epson XP-15000 (AP March 3) Matthew Richards revealed that even Epson XL cartridges offer a measly 10ml of ink which costs an eye-watering £1.80 per ml. Even the inks supplied with the XP-15000 are low capacity 'set up' cartridges which began running out after Matthew had produced only a few prints. I belong to a camera club with 20 members yet only three own an inkjet printer. The rest are frightened off by the crippling costs of running one. I challenge Canon or any other printer manufacturer to break down the costs of producing their inks and justify the sky-high price they charge for them. Photographers deserve to know whether 'liquid gold' – as the inks are flippantly called – is one of the components that Canon, Epson and co use in producing them. Their prices certainly suggest that's the case. **Mick Bidewell**

Thanks for these comments. Ink pricing remains a sore point for many readers, so we have passed your comments on to Canon and Epson and will let you know their response. We are also planning a feature on how to cut your printing costs while still getting great results – Nigel Atherton, editor



Ian Pratt LRPS sent us his image of a goldfinch, lit only by natural light

Winging it?

I appreciated the article by Andrew Fusek Peters (AP 3 March) about bird photography using flash, and his technical skill. However, my concern is that all the photographs look as though they have been taken at night. I prefer photographs which show the birds in their natural habitat using fill-in flash if necessary but ideally using natural light. As far as I am aware most birds are not flying at night but are roosting somewhere safe.

I attach one of my photos of a goldfinch which in my opinion is much more natural than the one shown in the article.

Ian Pratt

Each to their own, but we'd argue that bird photography can benefit from a variety of approaches. Do other readers feel the same way or have you put Andrew's tutorial to good use? – Geoff Harris, deputy editor

A Minor point

Congratulations on the 24 February issue. AP continues to be a journal of originality and substance in the world of photography; in particular because of the feature on mental well-being. References were made to Cartier-Bresson and others. Your readers might also like to know that the influential American photographer Minor White often resorted to the I Ching, the ancient Chinese system of divination, in connection with his work. **Peter McKenzie**

Thanks, Peter. I do indeed know the work of Minor White, a great photographer and teacher, who was also influenced by Zen Buddhism. The Practice of Contemplative

Photography by Andy Karr and Michael Wood is a great book to read if you are interested in this subject, or *The Zen of Creativity* by John Daido Loori – Geoff Harris, deputy editor

Politician's answer

Regarding the letter from Roger Fox, replied to by Geoff Harris about memory cards (AP, 3 March). I did not write 'answered by' because the direct question was not answered directly. Perhaps the deputy editor has been watching too many sessions of Prime Minister's Question Time? The question was – is it better to fill up a memory card before deleting all the pictures or is it ok to delete pictures regularly from the beginning of the card without causing damage to the card? I would like an answer to this sensible question because each time I load photographs from my camera to my computer and then to my back up external drive, I delete them from my camera.

Lionel Bailey

I can honestly say that is the first time I have been compared to Mrs May! Here's a fuller answer to clear it up. Flash memory is near-impossible to wear out, so it doesn't really matter. Theoretically it's marginally preferable to fill the card each time before reformatting, but practically it's usually preferable to start with a blank card before a new shooting session. AP has found that SD cards usually physically break before suffering from memory failure, so do handle them sensibly – Geoff Harris, deputy editor

Lionel Bailey wants a fuller answer about memory cards



Gursky groan

I was reading AP 17 February. It had a wonderful landscape with a magical waterfall on the cover. Being a landscape photographer, I was excited about the content, and on opening AP I saw 'Online Picture of the Week', by Ryan Kuhl, a magical monochrome of simplistic form, and thought that was something I would like to create. The magic stopped on the next page, when the 'Big Picture' was Andreas Gursky's 'Rhine II'.

I had just seen two good photographs which inspired me, but could only give 'Rhine II' blank looks. I asked my 11-year-old daughter, a keen photographer, what she thought. Her response was also blank looks. I work hard to create an image. I am not an artist but take an artistic approach, and for me photography lies in its own place, between art and science. Gursky is an established artist, his photograph sold for £2.7 million, and good on him; does this mean it is worth the money it went for, or has he found a nice little earner in the 'art world'? In the words of Ansel Adams, 'There are always two people in every picture, the photographer and the viewer.'

Steve Smith

I think the answer is in your last sentence – enough viewers enjoy and value Gursky's work for it to be able to command that kind of money. Big bucks aside, landscape photography can suffer from rather formulaic and predictable approaches, so we say vive la différence, and Gursky's current exhibition at the Hayward Gallery is going down a storm. Over to other readers for comment! – Nigel Atherton, editor

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2018**

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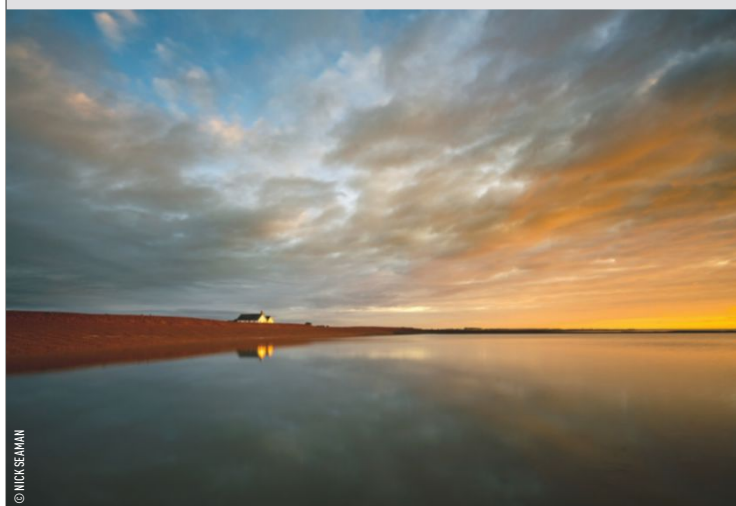
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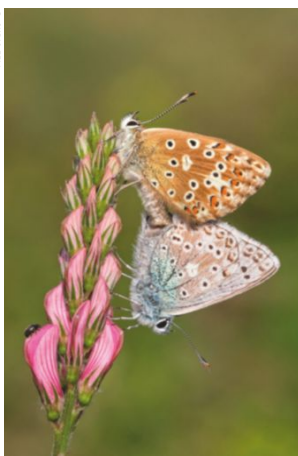
Join the Club

Cambridge Camera Club

Volac Park, Cambridge



© CHRIS FELL



© CHRISTINE BILPIT

This week we focus on a thriving club in the university city

When was the club founded?

Founded in 1902, Cambridge Camera Club is one of the oldest photographic societies in the UK and the biggest in East Anglia, with 200 members.

What does it offer new members?

It offers weekly meetings with speakers and competitions, plus monthly meetings for seven different special-interest groups. There are groups for portraiture, digital techniques and new members. Aperture is for those interested in personal projects, another group is external exhibitions or distinctions, while the Wednesday workshop is for practical sessions. Finally, there's the out and about group.

Describe a typical club meeting.

Most members arrive early for a chat, followed by the main event of the evening with a refreshment break at half time. Members often stay for a short while after the main business finishes at 9.30pm.

Do you invite guest speakers?

Yes, both locals and from farther afield. Recent speakers include sports photographer Mark Pain, who spoke about his experiences of photographing the Rio Olympics, and fine-art photographer Tony Worobiec.

Apart from meetings, in what other ways do members interact?

The club's popular website includes a members-only section. It provides a lightbox for members to share images with comments, a forum for wide-ranging discussions and two online members' competitions.

Do members compete in regional and national competitions?

Yes, they compete both individually and in interclub competitions, including the

Interclub Digital Competition, which Cambridge Camera Club hosts in January. It's a digital competition in which 36 East Anglian clubs take part.

Has the club, or individual members, ever won any big competitions?

We regularly win, or are in the top three places, of East Anglia Federation (EAF) Interclub competitions. In 2017 we won the EAF Print Championship and so we attended the Photographic Alliance of Great Britain (PAGB) finals, which was held in Blackburn in November.

What about national photographic society distinctions?

Many members hold the LRPS or CPAGB distinctions, with some at the next level (ARPS/DPAGB). We also have three FRPS holders and one MPAGB.

What are the most popular photographic genres among your members?

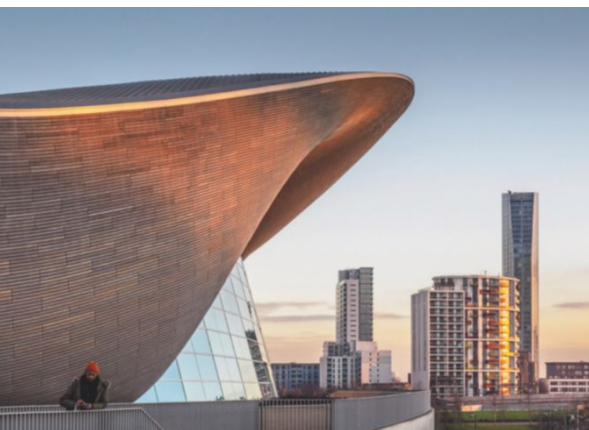
Among our 200 members we cover all the main photographic genres. Our 2017 annual exhibition, held in April, featured more than 400 print and digital images – the subjects included landscapes, architecture, nature, portraiture, street photography and sport.

How old are your members?

Our keenest cohort are members in their mid-60s, as people at that stage in life often have more time to devote to the club. However, we are fortunate to have a fair number in each of the age brackets from mid-30s upwards. For those aged 18 and under, we hold an annual competition and Young Photographer exhibition. Prizes are given for the best entries in different age categories.

What are the club's goals for the future?

We want to maintain the friendly, open nature of the club and yet still do well in external competitions. We would like to provide more for those people on our waiting list – we have a cap of 200 on membership, so people often wait two years or more to join the club. Our annual exhibition, mentioned above, is held in a prestigious central Cambridge venue and is supported by local businesses; we seek to expand and to improve this each year.



© BARRY RADDOCK



© CLIVE DOWNES

Club essentials

Meets Mondays at 7.30pm from September until mid-May at Cambridge Rugby Club, Volac Park, Grantchester Road, Cambridge CB3 9ED.

Membership Annual ordinary membership £43; Senior (over 60) membership £37; Student £21.

Contact clubsec@cambcc.co.uk

Website www.cambcc.org.uk

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Colleen Slater

Colleen Slater is a professional photographer and macro specialist with an interest in the smaller things in life. Her images draw attention to the ordinary, often unnoticed, things in the everyday world. Based in Brighton, she teaches photography one-to-one and gives talks on macro. Find out more at www.colleenslaterphotography.co.uk

Make use of shallow depth of field and selective focus for creative results
Canon EOS 5D Mark II, 100mm, 1/400sec at f/3.2, ISO 200

KIT LIST

▼ Canon Macro Twin Lite MT-24EX

You can adjust the flash ratio of each flash or fire only one of them. This provides modelling light rather than the flat light you get from a ring flash.



◀ Lastolite umbrella

This translucent, white umbrella is placed so that sunlight shines through the fabric. It will scatter the harsh light with a softening effect that will greatly enhance your images.



Light the way

Light is key to revealing intricate details of tiny subjects. Macro specialist **Colleen Slater** shares her top tips and lighting techniques

Macro photography presents a unique set of challenges to the photographer. When overcome though, it's possible to create intriguing images of things that may be overlooked or unseen with the naked eye. The difficulty lies in the close subject-to-sensor distance, which magnifies the subject and results in very shallow depth of field.

To get as much of the subject in focus as possible, it's necessary to stop down the aperture of the lens. For fast shutter speeds to avoid blur caused by subject or camera movement, you need a lot of light. Opening up the aperture will let more light in and diffuse the background, making the subject stand out. The depth of field will be extremely shallow, but you can achieve unusual, creative



ALL PICTURES © COLLEEN SLATER

◀ Reflector

These 5-in-1, collapsible, lightweight reflectors come in various sizes. Illuminate your subject by angling the reflector to bounce light onto the subject, moving it nearer or further away to change the intensity.



◀ Mirror

Simple 30x30cm mirror tiles can be bought in DIY shops. They are fairly robust and ideal for stowing away safely in a camera bag.



Stop down the aperture to get as much of your subject in focus as possible
Canon EOS 5D Mark II, 100mm,
1/40sec at f/9, ISO 200

images by precise use of selective focus.

You can shoot in daylight using the ambient light available, introduce flash on or off the camera or use continuous light from torches, LED lights, mirrors and reflectors. The quality and position of the light are important.

Ensure you diffuse bright sunlight and the light from flash heads. Harsh light creates too much contrast, with over-bright highlights and shadows lacking detail, especially when shooting subjects with shiny surfaces. Diffusers help to eliminate reflections, softening the light to give beautiful colours and tones. I use a white umbrella attached to a small tripod to filter sunlight. Bringing well-diffused flash heads closer to the subject will also help soften the light.

Using flash

Flash allows a smaller aperture to be used, giving greater depth of field. The built-in flash on some cameras is best avoided as the light is harsh and doesn't allow enough control over the power of the flash or its direction. Also, the flash may be obscured by the lens owing to the short working distance. The flash heads of the Canon Macro Twin Lite MT-24EX flash system I use are attached to the end of the lens, which helps to avoid this problem. You can adjust the flash ratio and angle of each flash head or fire only one of them. This offers a lot of control and more modelled light than that from using a ring flash.



Use a diffuser to filter harsh light and even out tones and colours
Canon EOS 5D Mark II, 24-105mm,
1/250sec at f/9, ISO 250

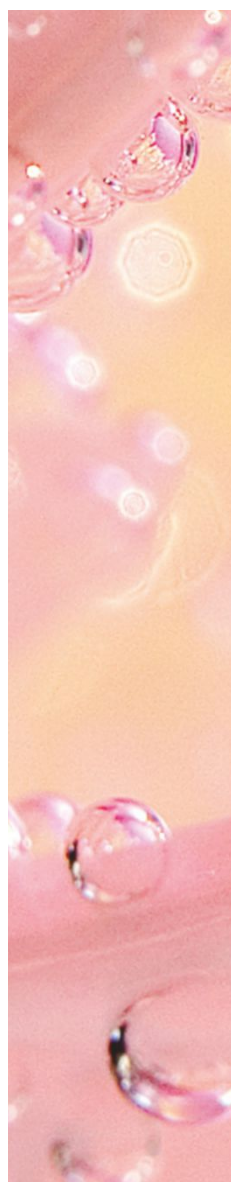
Fill light

Flash can be used as fill light to bring out the details, colours and textures of your subject, especially in the shadows. The trick to achieving a natural look is to balance the ambient light with the flash, and if done well, its use should be almost undetectable. First, take a shot to correctly expose the background, then introduce flash to expose the subject and alter the settings until it looks right. I usually use minus 1 or 2 stops of flash exposure compensation and set the camera to underexpose the background slightly. I find this gives the best results, making the subject stand out from the background.

Consider the background

Having flash as the only light source can be especially useful when

shooting handheld. The short duration of the flash freezes subject movement, allowing a smaller aperture to be used with the optimum ISO setting for image quality. The downside is that the flash will correctly expose the subject, but the background will be underexposed and may look dark and artificial. Avoid this by keeping the background very close to the subject. I usually set a shutter speed of 1/160sec and an aperture between f/8-f/16, at ISO 100. Manual exposure must also be used, otherwise the camera will attempt to correctly expose the background using a shutter speed that's much too slow. Mastering lighting techniques is key to producing great macro shots. Experiment and you'll soon learn which techniques and pieces of kit work best.



COLLEEN'S TOP TIPS FOR LIGHTING MACRO SUBJECTS



Use natural light

Outdoors, the best light for macro photography is a bright, overcast sky where the thin cloud diffuses sunlight and acts as a giant softbox. This provides an even, gentle light that brings out texture and detail and renders colour beautifully. This caterpillar was drying out after a rain shower.



Diffuse the flash

The plastic diffusers sold to go over flash heads won't work, because they don't increase the size of the light source. Many photographers make their own using styrofoam, tissue paper and tape, and so on. A quick internet search will bring up a wealth of information on how you can make these.



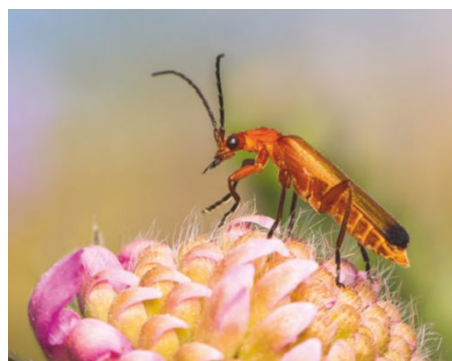
Avoid a black background

To achieve a natural look when using flash as the only light source, angle a leaf upwards, behind the subject or the petals of a flower to create a natural-looking backdrop. Or shoot up towards a bright sky, which will render as blue, use water as a backdrop, or try using a board/fabric close to the subject.



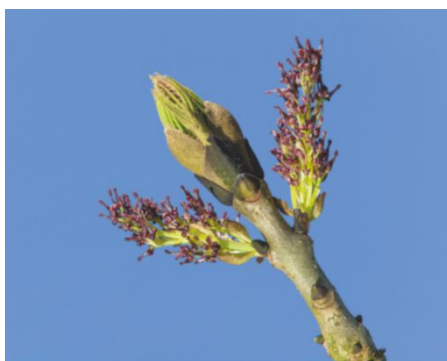
Why it works

Working in strong sunlight can create light effects with real sparkle and brilliance. I submerged a white chrysanthemum in water and the oxygen bubbles formed a decorative effect on the petals. Using a wide aperture, the out-of-focus specular highlights have taken on the shape of the 100mm lens diaphragm and become part of the composition. I used coloured gels (actually sweet wrappers!) on the top and sides of the tank to act as coloured filters as the sunlight shone through them onto the petals. It took a lot of experimenting to get something that worked, but I was happy with this one.



Diffuse the sunlight

A white translucent umbrella can be easier to use in the field than flat diffusers, especially if there is a breeze. Attach this to a tripod or lighting stand; I use a Manfrotto Lite-Tite Swivel Aluminium Umbrella adapter. Angle the umbrella and place it to filter the sunlight falling on to the subject.



Use reflectors and mirrors

Use a reflector to inject light into dark areas of the subject. Silver reflects more light than white, and gold can inject warmth when the light is cool. A mirror can be placed in sunlight, angled towards the subject to reflect much stronger light; this is especially useful when the subject is in shade.



Change the light position

Backlight your subject using a mirror, a powerful torch, sunlight or off-camera flash to provide a dramatic rim-light around your subject. Try side lighting to bring out all the texture on the surface of the subject and emphasise the details in the subject by keeping the background simple.

RISING STAR



Ashleigh Scully

AP talks to 15-year-old photographer Ashleigh Scully about conservation, winning competitions, and making a career out of photography

When did you first become interested in photography?

When I was eight I took a trip to the Alaskan coast. I was amazed by the diversity of the wildlife and came home with the intention of photographing animals in my own backyard. Alaska is still my favourite place to visit. Wildlife has always been my focus because I love observing and recording animal behaviour. I am mostly self-taught, but have had several mentors including Henry Holdsworth and Melissa Groo.

Do you have a favourite animal to photograph?

Coastal brown bears. Ever since my trip to Lake Clark National Park in Alaska, I keep thinking back to my time watching them interact. I observed sows with their cubs, and photographed them hunting, playing and sleeping. The affection between them was amazing.

What has been your most memorable experience so far?

Some of my favourite experiences have been in the field with biologists. Two summers ago, I joined Panthera's Teton Cougar Project visiting mountain lions and studying their positive impact on

ecosystems. I have also been out in the field with owl researchers studying great grey owls. Data collected from these studies is important because it helps us to understand how the species is faring.

Who are your main influences?

Many young nature photographers have influenced me: Connor Stefanison and Jess Findlay are two examples. I also consider Thomas Mangelsen an influence because he cares so much for his subjects. Melissa Groo is a friend of mine – she is a dedicated conservation photographer and has encouraged me to focus on images that tell meaningful stories. In addition, Paul Nicklen and Cristina Mittermeier are people I've looked up to for years and have been lucky enough to meet – they combine photography and science to tell stories they hope will drive positive change.

What equipment do you use?

I started out with a Canon EOS 7D and gradually upgraded to other bodies that enabled me to shoot in lower light, like the Canon EOS 5D Mark III. Thanks to some media jobs, awards and print sales, I recently upgraded to a Canon EOS-1D X Mark II. I use Canon EF 100-400mm f/4.5-5.6L IS II USM and Canon EF

A leopard relaxing next to its kill during an early morning game drive in Tarangire, Tanzania



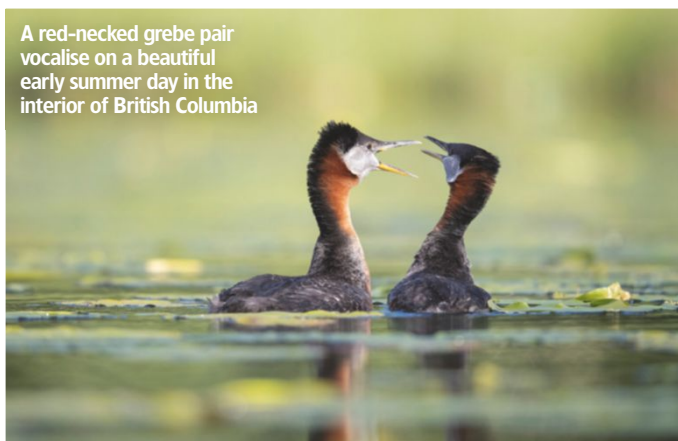
500mm f/4L IS II USM lenses. Last year, I was finally able to pay my parents back for some of my lenses!

Do you have any go-to settings?

I mainly shoot in aperture priority, although I do switch to manual when I want more control. With my Canon EOS-1D X Mark II, I usually use ISO 800 or higher, depending on the light and shutter speed I require.



A brown bear sow and cub pause on the tidal flats of Lake Clark National Park in Alaska, after a morning digging for clams



A red-necked grebe pair vocalise on a beautiful early summer day in the interior of British Columbia



Why was 2017 a great year?

I was named the 2017 Nature's Best Windland Smith Rice Youth Photographer of the Year. I also won my age category (11-14) in the Wildlife Photographer of the Year awards. In addition, I was selected to take part in the NANPA High School Scholarship Program, where I learned some photography techniques from leaders in the field and got to know a lot of other young nature photographers. I did an Instagram takeover for Adobe, which was an honour, and completed my year by self-publishing a children's book to support great grey owl research.

Why do you enter competitions?

The relationships I have developed through entering competitions are worth more to me than the prizes. Getting to know people I look up to, and connecting with people my own age is very rewarding. Competitions also give me a platform to tell a story with my images, which is important to me.

What advice can you offer entrants?

Prioritise shots that tell a story. Focus on conservation topics, and don't be afraid to enter something different or unorthodox. A picture that may encourage compassion for a subject, or perhaps raise conservation issues, is always worth entering.

What advice would you offer to a newcomer to wildlife photography?

Stay focused and shoot what you love. I limit my goals to species I want to learn more about. This means I can concentrate on what I feel is important, not what I think may be the best-selling print, etc.

Describe your dream assignment?

I would love to go back to Alaska and work on a wolf project.

Do you plan to make a career out of wildlife photography?

I'm not sure yet. I hope that a few more years of high school and then college will help me to decide what the opportunities

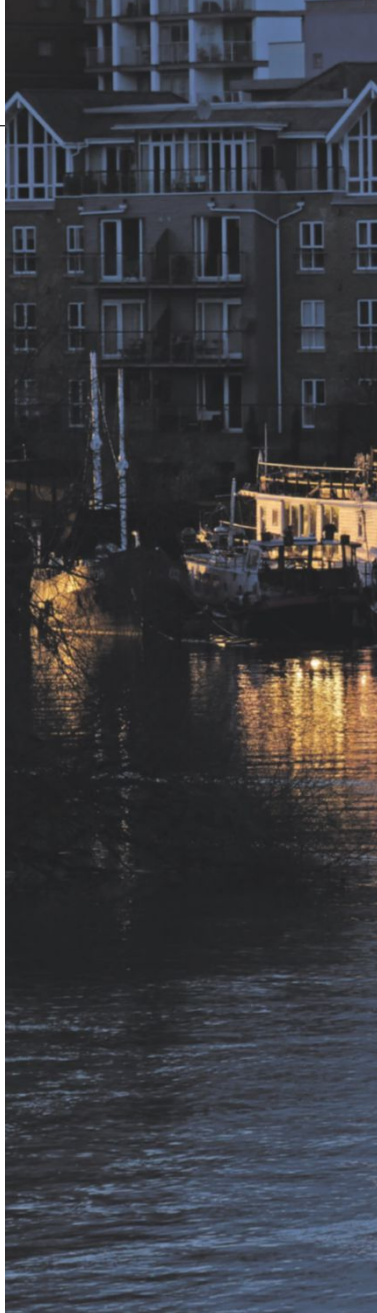
are. I am inspired by what some professional photographers are doing, and this keeps me motivated and hopeful that there may be something to pursue when I'm a little older. Right now, I am trying to learn more about science and animal behaviour through smaller projects to see if I can combine biology with journalism and photography in college/university.

Can photography instigate change?

Yes. I think we need to focus more on creating and celebrating images that grab people's attention and wake them up to conservation issues. Nature's Best and Wildlife Photographer of the Year are doing an awesome job of this. Some of my favourite photographers focus on storytelling and I know that they are inspiring other photographers to do the same: Paul Nicklen, Cristina Mittermeier, Brian Skerry, Steve Winter, and Brent Stirton are among them. Sometimes all it takes is a single photograph to instigate change.

AP

Ashleigh Scully is an accomplished nature photographer with a keen interest in wildlife conservation. Based in New Jersey, she has travelled all over the US, but lists Wyoming, Florida and Alaska among her favourite destinations. Her preferred subjects include red fox, grizzly bear, and all species of North American owls. Visit www.ashleighscullyphotography.com.



At a glance

£699 body only

- 20.3MP Four Thirds sensor
- ISO 100-25,600 (extended)
- 2.76m-dot tilting EVF
- 1.24m-dot 3in tilting touchscreen
- 5-axis Dual IS
- 4K video recording
- £789 with 12-32mm lens
- £879 with 12-60mm f/3.5-5.6 lens

Panasonic Lumix DC-GX9

Panasonic’s latest rangefinder-style mirrorless camera ticks a lot of the right boxes and offers some unique features, but just fails to wow **Andy Westlake**

For and against

Compact design is more portable than SLR-styled competitors

In-body stabilisation gives sharper results with every lens

Quiet shutter allows discreet shooting

Excellent Bluetooth and Wi-Fi smartphone connectivity

Default control setup is awkward for viewfinder shooting

16:9 viewfinder is a poor match to sensor

Control dials are under-utilised

Data file	
Sensor	20.3MP Four Thirds Live Mos
Output size	5184x3888
Lens mount / Lens	Micro Four Thirds
Shutter speeds	1/4,000 – 60sec mechanical 1/16,000 – 1 sec electronic
Sensitivity	ISO 200-25,600 (standard) ISO 100-25,600 (extended)
Exposure modes	PASM, Auto, Creative Control, Scene, Panorama, Manual Movie
Metering	Multiple, centre-weighted, spot
Exposure comp	+/- 3 EV in 1/3 steps via dial +/- 5 EV via menu
Continuous shooting	9fps with focus fixed 6fps in AFC mode
Screen	3in, 1.24m-dot touchscreen
Viewfinder	2.76m-dot equivalent LCD
AF points	49
Video	4K (3840x2160) 30p, 100Mbps
External mic	No
Memory card	SD /SDHC /SDXC
Power	DMW-BLG10E Li-ion
Battery life	900 shots (power save mode)
Dimensions	124x72.1x46.8mm
Weight	450g

Panasonic has experimented with making mirrorless cameras in a wider range of shapes and sizes than any other manufacturer. In addition to its central-viewfinder SLR-like designs, it has made plenty of flat-bodied rangefinder-style cameras in a large variety of sizes, both with and without electronic viewfinders. Many users felt that the much-loved GX7 of 2013 hit a sweet spot, with a relatively compact flat-body design that included a tilting electronic viewfinder and tilting screen. Its replacement, the GX8, gained a fully articulated screen and larger viewfinder, but its bulky body wasn't so well-received. The mid-range GX80 essentially revived the GX7 design, but with a fixed EVF. With the new GX9, Panasonic has listened to its users and made what many will see as a true

successor for the GX7. Available in a choice of silver or black versions, it's based on the GX80 body design. But it adds many of the best bits from the GX8 too, while throwing in all of the firm's latest technology. In the process, the firm has come up with an attractive little camera that should appeal strongly to enthusiast photographers. However, it does have its flaws.

Features

Panasonic has based the Lumix GX9 around a 20.3MP Four Thirds sensor similar to that used in the GX8. But it's removed the optical low-pass filter, which in principle should give slightly sharper, more detailed images at the possible expense of image artefacts such as false colour moiré and maze-like aliasing. The sensitivity range covers ISO 200-25,600 as standard, with an



The accurate electronic viewfinder helped me get this tricky exposure right in-camera
Panasonic 35-100mm 1/4-5.6 at 85mm
1/2000 sec at 1/7.1, ISO 200

extended ISO 100 option also available, but at the risk of clipping highlight detail.

Continuous shooting is slightly uprated compared to its predecessors, with the GX9 capable of 9 frames per second when the focus is fixed at the start of a burst. If you need the camera to adjust focus between shots, it's capable of doing so at 6 frames per second. The mechanical shutter offers speeds from 60-1/4,000sec, and operates with a pleasingly quiet, well-damped snick. It's supplemented by a fully electronic shutter option, which extends the speed range up to 1/16,000sec, and is completely silent in operation.

The autofocus system is similar to previous Lumix models, using Panasonic's contrast detection with Depth from Defocus (DFD) technology. The specified focus acquisition time is a decent

0.07sec, and Panasonic's usual huge range of autofocus modes is available, including face detection and pinpoint AF for homing in on small subjects. For holding focus on moving subjects the camera is now capable of tracking the entire image area in 3D, which Panasonic says should prevent objects that pass in front of your main subject from interfering with the focusing.

As with other recent Panasonic bodies, the GX9 includes the firm's latest 5-axis in-body image stabilisation. This is compatible with the firm's Dual IS system, working in concert with the optical stabilisation found in many Panasonic lenses for greater overall effect. As a result, users can expect to hand-hold at shutter speeds 4 stops slower than would otherwise be possible, without seeing image blur from camera shake.

One welcome update sees the GX9 adopting the same improved JPEG colour processing as the high-end G9, which aims to give more attractive sky colours and skin tones in particular. With updated processing and noise reduction, the firm says the camera can record more detail both at low and high ISOs compared to older models. There's also an enhanced version of Panasonic's attractive L. Monochrome mode that aims to simulate the look of black & white film. You can now add a grain effect to your shots, with a choice of different strengths. In addition to this, a cryptically named L. Monochrome D variant adjusts the tonality to bring out more detail in darker regions of the frame.

Panasonic's Power Save LVF mode comes to the GX series for the first time, too. This uses the eye sensor to power the camera

down when you're not looking through the viewfinder. When it's enabled, the DMW-BLG10E battery is rated for 900 shots per charge, compared to 250 shots without. The battery can be topped up through the Micro USB port, which sits behind a cleverly designed door that springs back inside the camera body when it's opened.

As usual for Panasonic, the camera is capable of 4K video recording, although it lacks the microphone and headphone ports found on the GX8. But it gains a few new additions to the firm's useful 4K Photo mode; the camera will auto-mark its suggested best shot in a burst, and can create composite images by combining selected frames from a sequence.

Alongside the usual Wi-Fi connectivity, Panasonic has added Bluetooth for making

Panasonic's JPEG processing now gives more attractive colours direct from the camera
12-32mm f/3.5-5.6 at 12mm
1/1250sec at f/4, ISO 200



an always-on connection to your smartphone via the free Panasonic Image App for iOS and Android. This brings a number of benefits; for example, you can easily use your phone as a simple remote shutter release. The Bluetooth connection can also be used to turn on the camera's Wi-Fi, either for remote control with a live view display and the ability to change almost any shooting setting from your phone, or for browsing and copying images for sharing to social media. It's even possible to do the latter while the camera is turned off and in your bag. Overall, this means that the GX9's smartphone connectivity is at least as good as any other camera on the market.

Design and build

In essence, the GX9 is an evolution of the GX80, being a compact, flat-bodied design with a tilting screen and corner-mounted viewfinder. This results in a very neat layout that's just a bit more portable than SLR-shaped rivals with central viewfinders. The GX9 seems pretty well made too, with a reassuringly dense feel, but unlike the GX8 it's not weather-sealed. For that, Panasonic fans will have to choose an SLR-shaped camera like the G80 or G9.

Like its predecessors, the GX9 has twin electronic control dials, one around the shutter button and the other embedded into the camera's back. But it adds an exposure-compensation dial nested below the exposure-mode dial, and a focus-mode selector switch on the back. An array of buttons arranged across the camera's back gives plenty of direct access to the most-used functions, but they're all quite small and flush to the body, with very shallow click actions. The GX9 also features Panasonic's well-designed touch interface for changing settings and browsing through images in playback.

The addition of the exposure-compensation dial is certainly a welcome touch that's in keeping with current camera fashion. Indeed the GX9's is particularly large and easy to use, clicking firmly into place at each setting while being easy enough to set with your thumb. The problem is that Panasonic hasn't taken the opportunity to rethink how the other two dials work, so most of the time they simply share the same function. It's only in manual-exposure mode that they're properly employed, with one controlling shutter speed and the other, aperture.

It's possible to set the camera so that pressing a programmable Fn button temporarily reassigns the control dials to alternate functions. I used this to give quick access to ISO and white balance by pressing the Fn1 button, which is handily placed beside your thumb. Out of the box, this operates Panasonic's 4K Post Focus mode, which I find to be very clever, but unfortunately of little practical use.

As on many previous Lumix cameras, the rear dial can be clicked inwards like a button, but strangely this doesn't seem to have any useful function on the GX9. It seems blindingly obvious to me that this should be used to toggle between dial functions, which would make the GX9 really quick to use. Unfortunately that's not an option.

As with many recent cameras, the touchscreen is used to select the focus point, even when you're using the viewfinder. Unfortunately if you don't like this approach, there's no physical control for moving the focus point. Instead you have to press the left and down keys in turn and then use the D-pad, which is rather slow and clunky. It's possible to reconfigure the D-pad to move the AF area directly, but then you need to reassign its functions

'The smartphone connectivity is at least as good as any other camera'

Panasonic's L Monochrome mode includes some attractive toning options
Panasonic 35-100mm
f/4-5.6 at 60mm
1/5000sec at f/5.6,
ISO 200



elsewhere, most obviously to the customisable onscreen Q Menu.

With all these controls and user-customisability, it should be possible for most users to configure the camera to suit their preferences, as long as they're prepared to delve into the camera's settings. Fortunately Panasonic's menus are relatively clear and well laid-out, including a user-customisable My Menu for your most-used items. However I can't help but think that Panasonic is using the camera's customisability as a crutch for delivering a mediocre setup out of the box. Yet again, the firm has missed an opportunity to revise how its cameras work to make them better for viewfinder shooting. It's frustrating, because the GX9 has more than enough controls to be a really likeable camera, but it lacks the ability to make the best use of them.

Viewfinder and screen

If there's one feature that sets Panasonic's single-digit GX-series cameras apart, it's the tilting electronic viewfinder. In essence, the GX9 uses the same LCD viewfinder as the GX80, but in a tilting housing that lets it rotate upwards by 80°. Some photographers find this feature very valuable, but to be honest,

I don't have any use for it at all. If I need to shoot at an angle, I prefer using the tilting LCD.

Just like the GX80, the GX9 uses a 2.76m-dot equivalent field-sequential LCD viewfinder with a 16:9 aspect ratio. Rather than using separate red, green and blue pixels in the panel, this displays red, green and blue images in very quick succession, to give a convincing illusion of a full-colour display. However, in certain situations, for instance when you're panning, it can display colour-tearing artefacts, where white areas flicker through the three colours. It's not a serious problem, but some photographers do find it very disconcerting.

The 16:9 aspect ratio is great when recording video, giving a wide view with a very decent 0.7x equivalent magnification. But when you're shooting stills at the sensor's native 4:3 aspect ratio, the area of the display that's actually used decreases significantly, giving a magnification around 0.6x. Compared to the GX8 this is a major step backwards. Overall I found the GX9's EVF to be quite acceptable, but it's a long way from being the best I've used.

Below the viewfinder, the 1,240k-dot LCD is very nice indeed, and can tilt up and



Focal points

The GX9's compact, flat-bodied design packs in a huge array of features

Power save mode

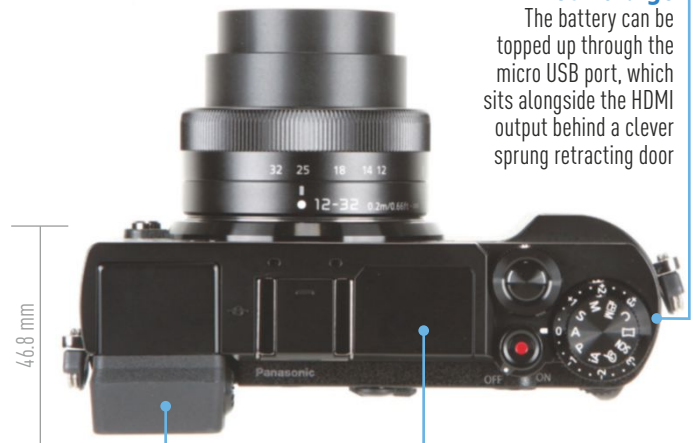
The DMW-BLG10E battery is rated for 900 shots per charge with power save enabled, compared to 250 shots without

Wi-Fi and Bluetooth

Panasonic's smartphone connectivity is excellent, with the always-on Bluetooth connection making it especially easy to copy images for sharing

USB charge

The battery can be topped up through the micro USB port, which sits alongside the HDMI output behind a clever sprung retracting door



Tilting viewfinder

Like the GX7 and GX8 before it, the GX9's viewfinder tilts 80° upwards

Built-in flash

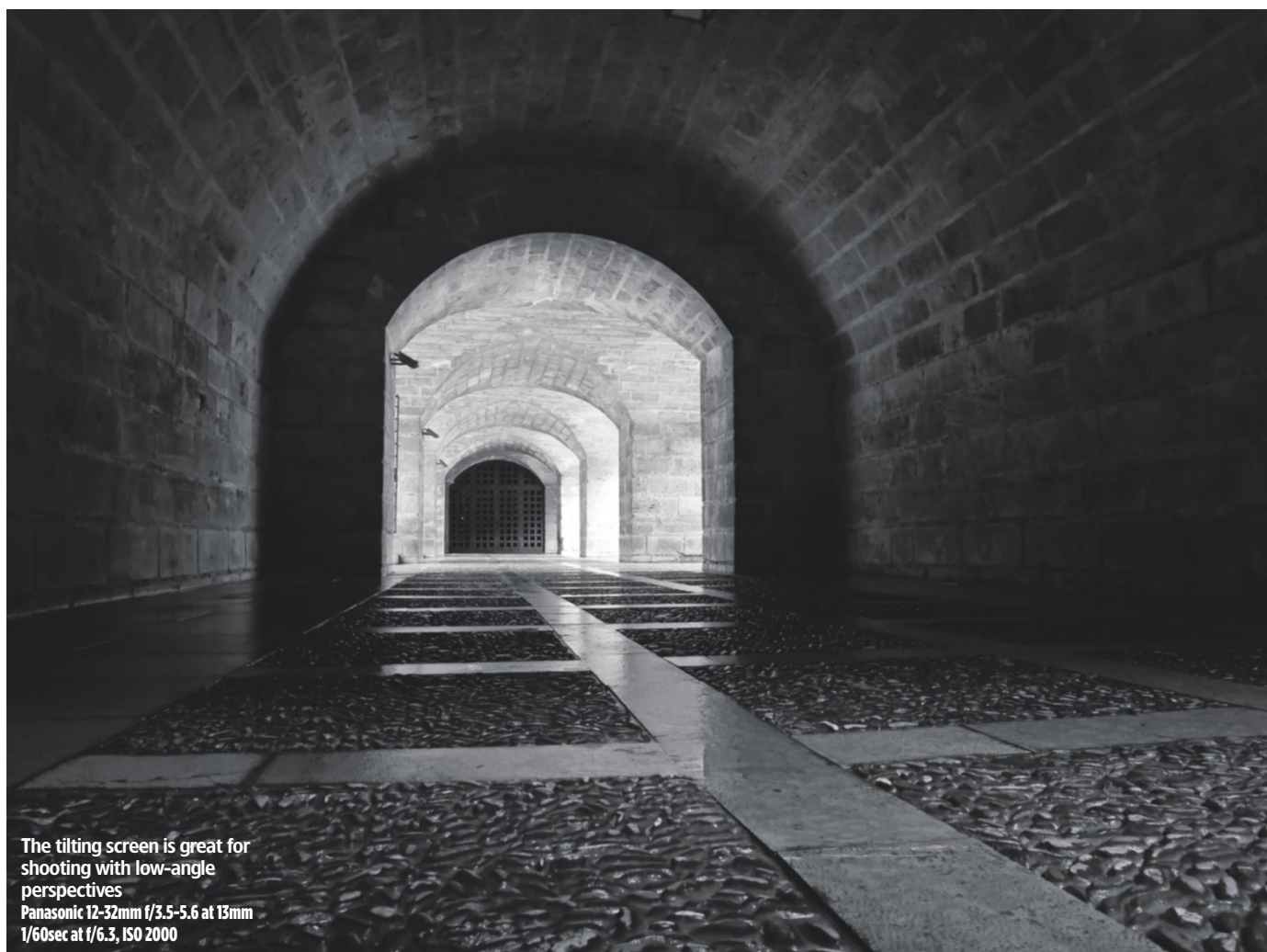
A small flash unit pops up from the top-plate, with a hotshoe beside it that can accept more powerful units for creative lighting



Tripod socket

This is located in line with the lens but right at the front of the camera body, which could cause problems with some large lenses and quick-release plates





The tilting screen is great for shooting with low-angle perspectives
Panasonic 12-32mm f/3.5-5.6 at 13mm
 1/60sec at f/6.3, ISO 2000

down for shooting at unusual angles. While this design is limited in comparison to the GX8's fully articulated display, and only really useful when you're shooting in landscape format, many photographers find it a good fit to this kind of small-bodied camera. Tilting the screen now turns off the viewfinder eye sensor, which makes shooting at waist level very much easier.

Autofocus

Like other Lumix cameras, the GX9 employs a unique autofocus system that uses contrast-detection supplemented by Panasonic's Depth from Defocus technology. This exploits knowledge of the lens's defocus characteristics to determine how it needs to adjust the focus group from two AF measurements taken at slightly different positions. In essence, it tries to do a similar job to phase detection without needing dedicated focus pixels on the sensor.

With static subjects the GX9's

autofocus works extremely well, and Panasonic's vast array of focus modes gives you the tools to deal with every kind of subject. It's as quick as you could possibly need it to be, and accurate too, even with large-aperture lenses and off-centre subjects.

Once your subjects start to move, however, the GX9 reveals its limitations. It's not terrible by any means, but it does feel a little bit sluggish and less decisive compared to cameras that can exploit phase detection to measure movement. I don't think that it would be the best choice for sports and action photography, but for less-pacey subjects such as street photography, it should be just fine.

Performance

We've become used to Panasonic's cameras being very capable performers, and the GX9 continues in this vein. In everyday shooting it's quick and responsive, and I never found myself being held up by the camera's operation.

Metering is quite reliable, with the GX9 generally doing a good job of avoiding losing highlight detail due to overexposure. It's not perfect though and I often found myself applying exposure compensation to lighten or darken my shots. However the viewfinder is accurate enough to make this easy with a twist of the exposure compensation dial; indeed the ability to accurately judge exposure before pressing the shutter button is a key advantage of mirrorless cameras over DSLRs.

Panasonic's improvements to its JPEG colour rendition are quite evident, with the GX8 delivering noticeably more attractive output than the likes of the GX8 and GX80. However it's still perhaps not quite as good at judging auto white balance as the best of its rivals, so I often found myself overriding the camera and switching to a preset. Alternatively, Panasonic's well-designed in-camera raw converter allows you to adjust your settings after shooting and generate a new file

in-camera for sharing.

High ISO noise reduction is also slightly improved compared to previous Lumix models, giving pretty clean-looking images up to ISO 3200. Above this, though, detail suffers quite significantly, although this isn't necessarily a problem if you're only using the images on social media or for small prints. Switch to monochrome and you can get away with shooting at very high ISOs, especially if you exploit the grain setting to hide the effects of noise and noise-reduction.

Panasonic's in-body image stabilisation works pretty well, and the fact that it works with every lens you can mount on the camera is a huge practical advantage. This includes types that aren't usually optically stabilised, such as wideangles and fast primes. It means that with static subjects you can often get away with shooting hand-held at slower shutter speeds than you might expect, and therefore use lower ISOs for better image quality.

Lab results

Andrew Sydenham's lab tests reveal just how the camera performs

Our cameras and lenses are tested using the industry-standard Image Engineering IQ-Analyser software. Visit www.image-engineering.de for more details

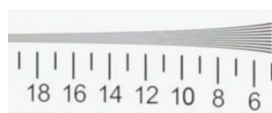


Panasonic has used essentially the same 20MP sensor that we first saw in the GX8 almost three years ago, but now without an optical low-pass filter. In principle this should give the maximum possible detail, but at the risk of artefacts such as a moiré patterning and maze-like aliasing. Both Panasonic's JPEG processing and the SilkyPix raw processor, however, take the approach of blurring away these artefacts, which loses any resolution advantage. I'd expect to be able to extract finer detail using Adobe Lightroom or Camera Raw when GX9 support is available.

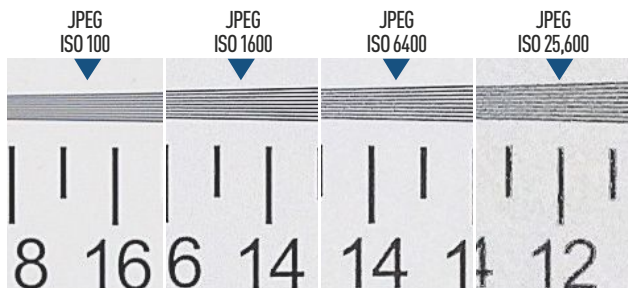
Resolution

With no low-pass filter in front of its 20MP sensor, in principle the GX9 should do well in our tests. But with both the camera's JPEG processing and the SilkyPix raw conversion being a little heavy-handed with respect to noise reduction, it's a bit behind what we'd

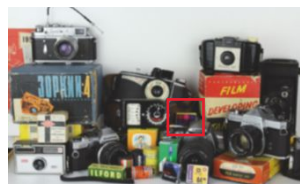
expect. At ISO 100 it resolves a respectable 3,300 l/ph, but this falls off progressively as the ISO sensitivity is raised, to around 2,900 l/ph at ISO 1600. This drops to 2,700 l/ph at ISO 6400, before plummeting at higher settings to just 2,400 l/ph at ISO 25,600.



On the right we show details from our resolution chart test pattern (above). Multiply the number beneath the lines by 200 to give the resolution in lines per picture height.



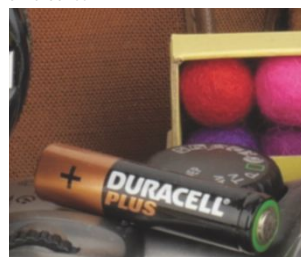
Noise



The crops shown below are taken from the area outlined above in red

At ISO 100 the GX9 delivers very clean images, with plenty of detail and essentially no visible noise. As the sensitivity is raised, fine detail is gradually lost due to the effects of noise and noise reduction, until at ISO 1600 low-contrast texture is substantially lost. Crucially though, colour is retained well, which means images continue to look good if you don't stare closely at the pixel level. Saturation remains strong up to ISO 6400, but beyond this it deteriorates quickly, and I'd avoid using ISO 12,800 or higher for colour images. If you shoot raw, you'll be able to tease a bit more detail out at high ISOs, compared to the camera's default JPEG processing.

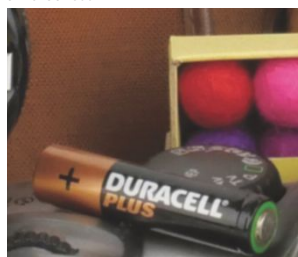
JPEG ISO 100



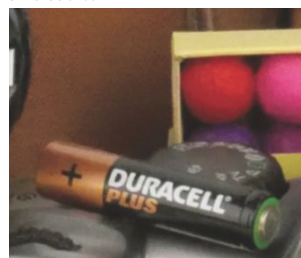
JPEG ISO 400



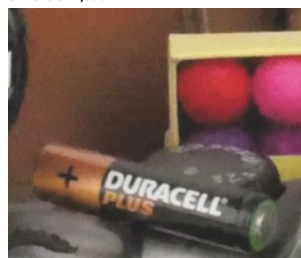
JPEG ISO 1600



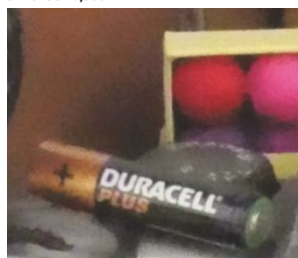
JPEG ISO 6400



JPEG ISO 12,800



JPEG ISO 25,600



Verdict



In many ways the GX9 is a really fine camera. It's small and easy to carry around, and I prefer its compact design to the bulkier GX8. Yet it still finds space for plenty of external controls, allowing enthusiast photographers to tinker with their settings. It has a solid core specification, but is also packed full of useful features that you won't find anywhere else. Crucially, Panasonic has delivered on its promise to give more attractive JPEG colour rendition. So far, so good: this is a camera that I can't help but feel that I should like, a lot.

As an overall package, though, it just comes up short. The body design is nice enough, but doesn't really excel. The controls aren't set up especially well straight out of the box, especially if you like to be able to easily change settings while looking through the viewfinder. It's great to see the addition of a dedicated exposure compensation control, but it's unfortunate that Panasonic hasn't made any better use of the dials that were already on the GX80. It just feels like a half-finished job.

It's also disappointing to see Panasonic's 16:9 field-sequential EVF appear yet again, as it's a poor match to the sensor's 4:3 aspect ratio. I'd rather have a taller, but narrower EVF that gave greater magnification for stills, like that on the GX8.

Perhaps I'm being overly churlish here: after all, it's clear that the GX9 packs a lot of useful technology into a relatively small body at an appealing price. When you consider its compatibility with a huge range of Micro Four Thirds lenses, not just from Panasonic but also Olympus, Samyang and Sigma, it's clearly got the potential to sit at the heart of a very powerful, yet portable set-up. But it doesn't quite feel like it's worth the premium over the GX80, especially as it retains many of the same flaws, two years on. It's almost excellent, but surely Panasonic can do better.

FEATURES	9/10
BUILD & HANDLING	8/10
METERING	7/10
AUTOFOCUS	8/10
AWB & COLOUR	8/10
DYNAMIC RANGE	8/10
IMAGE QUALITY	8/10
VIEWFINDER/LCD	8/10



THE EISA PHOTOGRAPHY MAESTRO CONTEST 2018

This Year's Theme:
Nature

1ST PRIZE
€1500 & EISA Maestro Trophy

2ND PRIZE
€1000 & EISA Maestro Trophy

3RD PRIZE
€750 & EISA Maestro Trophy



HOW TO ENTER

Provide 5-8 photographs on the theme of 'Nature'. All entries must be in digital format (from a digital camera or scanned film originals).

All National Maestro winners' images will also be published on Facebook at the end of June for the EISA Public's Choice competition. Prize for the winner: €1000.

UK DEADLINE: 1 MAY 2018

AP has teamed up with Photocrowd to host the contest, so to enter the competition, simply go to www.photocrowd.com/maestrouk. The top three winners will be chosen by the *Amateur Photographer* team and the results will be published in a June issue of AP. The first prize winner will win a print subscription to AP and will also go forward to the International round of the contest.

INTERNATIONAL JUDGING:

JUNE 2018

The winning entries from each of the 15 participating EISA countries will then be judged together at the Association's general meeting in June 2018. The final results of the International Maestro contest will be revealed at the EISA Awards Gala on 31 August 2018.

Results will be published in the September or October issues of all 15 EISA photo magazines/websites. All three winners will be invited to Berlin at the official EISA Awards ceremony on 31 August



For further details, terms and conditions visit www.eisa.eu/maestro

The lens is equivalent to a 150–600mm zoom when it's paired with APS-C DSLRs, making it a good candidate for wildlife photography
 Canon EOS 77D, 400mm, 1/2000sec at f/6.3, ISO 800

Tamron 100–400mm f/4.5–6.3 Di VC USD



This Tamron zoom promises impressive image quality in a lightweight, compact design. **Michael Topham** finds out if it lives up to high expectations

Generally speaking, we expect long telephoto zooms to be large, heavy and cumbersome items. Last year, however, Sigma bucked this trend with the announcement of the 100–400mm f/5–6.3 DG OS HSM | C. Unlike the company's Sport and Contemporary 150–600mm zooms, which are aimed at advanced photographers, it's a lens that's designed for keen amateurs and aspiring enthusiasts who want to get close to distant subjects without having to spend a four-figure sum. It quickly became a hit with its intended audience, as well as full-frame users who liked the idea of owning a lightweight and

versatile zoom for travelling and general use.

Since then, Tamron has launched its own variant in the guise of the 100–400mm f/4.5–6.3 Di VC USD. The concept is similar to its Sigma rival, but with subtle differences between the two, it begs the question, which makes the better choice?

Features

Unlike its Sigma rival, which has a maximum aperture of f/5 at the widest end and f/6.3 at full telephoto, this lens is a third of a stop faster at 100mm and has a variable aperture of f/4.5–6.3. When you set the lens to f/4.5 and

advance through the zoom range, it closes to f/5 just beyond 135mm and f/5.6 at 180mm. Extending the lens beyond 280mm sees the maximum aperture close to f/6.3. The drawback compared to the likes of Canon's EF 100–400mm f/4.5–5.6L IS II USM and Nikon's AF-S 80–400mm f/4.5–5.6G ED VR is that it's a third-stop slower at full telephoto, but it makes up for this by being lighter and more portable. The barrel is noticeably thinner than the aforementioned zooms and it weighs around half a kilogram less, putting noticeably less strain on your body when it's carried as part of your kit or slung over the shoulder.

Precise autofocus and effective optical image stabilisation are essential to the performance of a telephoto zoom lens, and this optic provides both. In addition to having a micro-processing unit with a built-in digital signal processor to ensure excellent AF





This shot was captured at the widest point in the zoom range at the maximum aperture on an APS-C DSLR
 Canon EOS 77D, 100mm, 1/1000sec at f/4.5, ISO 800

responsiveness, the lens features a separate micro-processing unit that's dedicated to vibration compensation (VC). This, combined with the fine-tuning of the enhanced control algorithm, provides a level of stabilisation that allows users to shoot with shutter speeds four stops slower than is otherwise possible.

The Tamron's optical formula isn't as complex as its Sigma rival. It features 17 elements in 11 groups as opposed to 21 elements in 15 groups. Three low-dispersion (LD) glass elements are relied upon to control optical aberrations and Tamron's proprietary eBAND (Extended Bandwidth & Angular-Dependency) coating is used to prevent reflections and produce clear, vivid images. The nine-bladed circular diaphragm closes down to a minimum aperture of f/32 at 100mm (f/45 beyond 290mm) and it has a minimum focus

distance of 150cm with a maximum magnification ratio of 1:3.6.

Available in Canon or Nikon mounts, the lens accepts filters via a 67mm thread at the front. It's also compatible with Tamron's TAP-in console, which provides a USB connection to your computer, enabling users to easily update the lens's firmware when required as well as customise and fine-tune the AF and VC.

As part of the boxed contents you get a nicely profiled plastic lens hood and lens caps, but annoyingly the tripod mount is an optional extra, adding £109 to the cost of the lens.

Build and handling

The styling of the lens conforms to Tamron's premium G2 lenses. The metal barrel is presented in an attractive matte-black finish with easy-to-read lettering and numbering

'The zoom ring is rotated anti-clockwise to zoom in'

standing out in white. From the metal lens mount looking forwards, the barrel tapers outward slightly before it reaches its maximum diameter, just beyond where the optional tripod collar attaches. Ahead of this, you get a focus distance window, with large and positive focus and vibration-compensation switches offset to the side. Both switches have three settings, with the limit setting in-between AF and MF being useful when you'd like to restrict the closest focus distance to 7m and reduce hunting when shooting distant subjects. The VC switch can be set to Mode 1 to compensate for handshake related to general photography, or Mode 2 for panning with moving subjects. Alternatively, it can be turned off when the lens is fixed on a tripod or mounted to a support.

Further down the barrel there's a plastic-ribbed manual-focus ring that operates fluidly with just the right level of resistance for fine focusing adjustments. Ahead of it is a large rubberised zoom ring that benefits from a zoom lock off to the side to keep the focal length locked at 100mm for storage and transportation purposes. Our sample didn't show any sign of zoom creep and extended from wide to full telephoto lengths consistently smoothly, whereas its Sigma rival requires just a touch more effort at the long end of its focal range. The zoom ring is rotated anti-clockwise to zoom in and the throw of the zoom is such that it's a two-stage process to get from 100mm to 400mm. Like its Sigma rival, it can be extended quickly by pushing the lens hood



Corner shading is clearly evident in this shot taken on a full-frame DSLR
 Canon EOS 5D Mark III, 250mm, 1/3200sec at f/5.6, ISO 200

Vibration Compensation switched off



Vibration Compensation switched on



At full telephoto (400mm) I achieved consistently sharp handheld shots at 1/80sec with VC turned on

away from the camera. That said, it lacks a ridge at the rear of the hood, making it less easy to retract, especially when wearing gloves.

Its moisture-resistant construction and fluorine-coated front element provide extra reassurance when it's used in harsh conditions.

Image quality

To get a clear understanding of how the lens performs across its full image circle, it was coupled to a full-frame DSLR for our stringent lab tests. Results at the wider end of the zoom show that there's an improvement in centre and corner sharpness by stopping the lens down from its maximum aperture to f/8. Sharpness figures at the edge at full telephoto aren't as high as those recorded at 100mm or 200mm. However, centre sharpness at 400mm is impressive, peaking between f/8-f/11. Ultimately, to get the best out of the lens at any given focal length, it's best to use it at around f/8. There is the option to stop the lens down and shoot at apertures smaller than f/22, but as you begin to hit f/16 you'll start to notice a loss of sharpness due to diffraction. As the image of St Paul's Cathedral illustrates, vignetting is evident when the lens is used at its maximum aperture on a full-frame DSLR, both at wide and full telephoto lengths. Corner shading becomes less obvious when the lens is stopped down to an aperture of f/8 or beyond. On crop-sensor cameras, only the central portion of the lens's image circle is used, thus corner shading is noticeably less severe. I was very impressed by the way the zoom controls chromatic aberration, with virtually no green or purple fringes being observed along high-contrast edges. Distortion testing tells us that pincushion distortion is greater at 400mm than it is at 100mm, but this along with the vignetting at wide apertures was a one-click fix by placing a tick in the Enable Profile Corrections box within Lightroom CC.

AP

Verdict

Its size, build quality and performance implies it'll be more of a hit with amateurs and aspiring enthusiasts using APS-C DSLRs than it will be with full-frame DSLR users. That being said, I wouldn't disregard pairing it with the latter when a smaller and lighter tele-zoom is preferable. The only thing full-frame users will want to do is apply lens corrections in post – a must to get around the issue of heavy vignetting at the corners.

Sigma missed a trick on its lens by not equipping it with a tripod collar. Tamron hasn't made the same mistake and the optional tripod collar with Arca-Swiss compatibility is essential if you'd like to mount it to a tripod. It's £199 more expensive than its Sigma rival with the tripod collar included, but I'd say this is a price worth paying for better support and stability midway down the barrel. Overall, it's a fine example of a lightweight tele zoom.



Data file

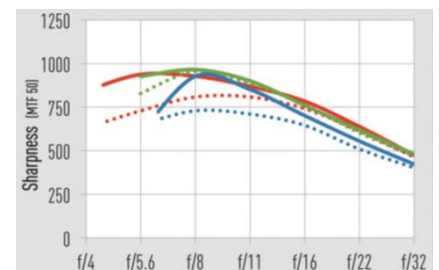
Price £789
Filter diameter 67mm
Lens elements 17
Groups 11
Aperture blades 9
Maximum aperture f/4.5-6.3
Minimum aperture f/32-45
Minimum focus distance 150cm
Dimensions 86.2x199mm
Weight 1,135g
Lens mount Canon, Nikon
Included accessories Lens caps, Lens hood

Amateur Photographer Testbench GOLD
 ★★★★★

Tamron 100-400mm f/4.5-6.3 Di VC USD

Resolution

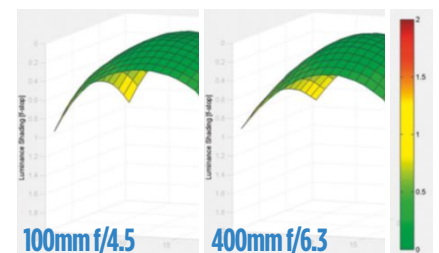
Our Image Engineering MTF tests reveal that the lens is sharpest at maximum aperture at the wide end of the zoom. At 400mm, centre sharpness sees a considerable improvement by stopping down from f/6.3 to f/8. Corner sharpness figures at 400mm aren't as high as they are at 100mm or 200mm, but this isn't enough to put you off using the lens at the end of its zoom range.



100mm centre — 100mm corner
 200mm centre — 200mm corner
 400mm centre — 400mm corner

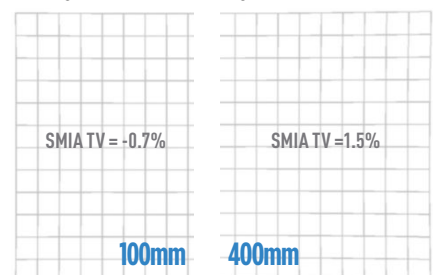
Shading

On an APS-C DSLR, only the central portion of the lens's image circle is used, meaning it exhibits less vignetting than when it's coupled to a full-frame camera. To reduce the effects of vignetting, users can stop the lens down to f/8 or remove it in post effectively by applying the correct lens profile.



Curvilinear distortion

Our tests reveal the lens exhibits greater distortion than the Sigma 100-400mm f/5-6.3 DG OS HSM | C. Pincushion distortion gradually becomes more noticeable the further the zoom is extended, with horizontal and vertical lines on the test chart bowing inwards from the edge to the centre.



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Vanguard VEO 2 235CB

Andy Westlake tests a versatile and portable, full-size travel tripod kit

£200 • www.vanguardworld.co.uk

WITH cameras featuring ever-improving high-ISO performance and increasingly effective image stabilisation, it's often tempting to think that you can get away without using a tripod. However, there are still occasions when nothing else will do. If you don't want to lug around a heavy, full-size support, the Vanguard VEO 2 235CB is a really capable, lightweight option.

This mid-sized model in the VEO range uses five-section carbon-fibre legs to keep the weight and packed size to a minimum. Like many other tripods the legs fold around the head, but Vanguard uses a unique design where the column rotates 180° downwards, which is far quicker than folding all the legs upwards as with other travel tripods.

Set-up is really quick, as all five sections of each leg can be unlocked together with a single twist. The legs can each be set independently to either 20°, 45°, or 80° angles using large, easy-to-operate press-in locking buttons. In the lowest position, transferring the head to the supplied short centre column allows ground-level shooting.

You need a decent head too, and the VEO 2 BH-50 that comes in the kit is much better than those you'll find on most other lightweight tripods. It has separate controls for the panning base, locking down the camera, and adjusting the ball friction. The latter is pretty rare at this price, and makes it easier to work with different size cameras and lenses. The square quick-release plate is Arca Swiss compatible and fits onto the clamp any way around, while a bubble level on the camera platform helps keep your horizons straight. Crucially, the head locks down firmly without nudging the camera away from your chosen composition.

Verdict

With so many travel tripods now on the market, it's difficult to stand out from the crowd. But Vanguard has made a really neat tripod that's quick to set up and capable of supporting a surprising weight. The construction and quality of materials are fine, while the grey, militaristic finish is unobtrusive, and won't reflect any unwanted colour cast onto your subjects. I'd be quite happy using this tripod with a mid-range DSLR or larger mirrorless camera and a medium telephoto zoom. Naturally it's most stable with the centre column dropped down, which gives a working height just shy of 120cm, so if you need to support the camera at eye level it'll likely be too small. That aside, it's a great choice for when you need to travel light.

Suspension loop

Can be used with a carabiner for clipping the tripod onto a bag, or suspending a bag from the tripod for greater stability.

BH-50 head

The supplied head has separate controls for locking the camera, friction adjustment and the panoramic base.

Low angle

A short centre column is included for shooting at ground level.

Carry bag

A lightweight drawstring nylon bag with a decently long adjustable shoulder strap is included for transporting the tripod.



THE VEO 2 TRIPOD RANGE

Vanguard makes its travel tripods in a range of sizes and in a choice of materials, starting with the 4-section aluminium 204AB (£99), ranging up to the largest carbon-fibre 265CB (£249). All use the same basic design, with rotating columns and twist locks. If you prefer lever-type leg locks, these are available on the older VEO models.



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Non-detachable type

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Adjusting white balance – raw only?

Q Excuse my ignorance, but I am relatively new to this and expect my question goes beyond Lightroom. I thought that one of the advantages of capturing raw images as opposed to JPEGs is that you can change the white balance. Lightroom seems to allow me to change the white balance on JPEG files as well. What am I not understanding?

John (AP forum)

A The white balance of an image is subjective. In simple terms, a neutral white balance is demonstrated when neutral grey areas, including white, don't exhibit an abnormal hue. In a perfect world, you can correct the white balance by globally adjusting the colour of an image until a target grey area becomes neutral. For ease of use, you can do this by clicking a pointer on a target area in the image. The pixels covered are then sampled and analysed, and the colour channels adjusted accordingly. As you point out, this will work for both raw and JPEG images. Lightroom is no exception. The big advantage of

correcting white balance in raw files is that you get a more accurate result. See the pictures of the orchid bloom here. I shot the pictures in raw and JPEG at the same time, deliberately in daylight with the camera set to tungsten light colour temperature. Both the unadjusted raw file (A) and JPEG version (B) have, as you would expect, a blue cast. But look what happens when the same target area was used to correct the white balance. The raw file produced a natural-looking result (C), while the JPEG (D) colours are wrong. This is because the colour channels in the raw file are still discrete. They can be adjusted independently at the pixel level. With JPEG, the pixels are made up of colours that have already been mixed from the separate channels, making overall adjustment much less consistent. My example is an extreme one to demonstrate the point. Fortunately, this inherent inconsistency is less obvious where the white-balance error is not so extreme in JPEG images. So yes, you can correct white balance in JPEGs, but beware of inconsistencies compared to correcting it in raw files.



Correcting white balance in a raw file is more accurate compared to a JPEG

Panasonic lens with an Olympus camera

Q I have bought an Olympus OM-D E-M1 Mark II. Could you tell me if my Panasonic Leica 100-400mm lens will work with this camera?

Tom Garland

A This is a slightly curious question, as one would expect that you have tried the lens with your new camera body. The simplest answer I can give is yes, but with a small caveat. The Panasonic Leica 100-400mm is a Micro Four Thirds lens and, by definition, is compatible with your Micro Four Thirds Olympus OM-D E-M1 Mark II camera. However, although both are designed to operate in dual-IS mode, whereby sensor-shift in-body image stabilisation (IBIS) works in tandem with the lens optical image stabilisation (OIS), Olympus and Panasonic have independently developed dual-IS systems that are not compatible. With telephoto lenses, optical stabilisation is usually more effective than in-body IS, so it's best to keep the lens's IS switch set to On. There's no need to turn off the in-body stabilisation, as the E-M1 Mark II will do this itself.



With long telephotos OIS is more effective than IBIS

Flashing Steady Shot icon with exclamation mark

Q In July I purchased a Sony Cyber-shot RX10 III, as I found that lugging around the 600mm lens for my Nikon camera was difficult on holiday. I am really pleased with its performance, but have noticed recently that the Steady Shot icon is constantly flashing. As I am due to go on a holiday of a lifetime to Costa Rica in the near future, I am concerned that there may be problems which could affect my ability to take some amazing shots without them blurring.

Sandra Talbot

A It's more than likely that your recent use of the RX10 III camera, when

you noticed the Steady Shot warning symbol, was under conditions where there wasn't adequate light to ensure a fast enough shutter speed, therefore, risking camera shake blur. Your question was received in early 2018 – in the middle of winter, when the days are usually darker than a typical July day. A simple way of checking to see whether my hunch is correct is to point the camera at a bright light. The Steady Shot warning should then go away. If it remains, double check the camera settings and try again. If the Steady Shot icon continues to flash, however, then you will need to consider getting the camera serviced.

Q&A compiled by Ian Burley

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QAP CODE: 14AW



The Ricoh 500ME
with its unusual
SP-Winder attached

BLAST FROM THE PAST

Ricoh 500ME

John Wade examines a 35mm compact with some unexpected features

LAUNCHED: 1980

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(WITH MOTOR DRIVE):** approx £65

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By 1980, 35mm coupled rangefinder cameras, other than those in the Leica M series, were largely a thing of the past. Likewise, clockwork in motor drives had long been superseded by batteries. The trouble is, no one seemed to have told Ricoh when it decided to launch the 500ME.

It's a compact camera in all senses of the word, measuring just 10.5x8x5.5cm. The shutter is mechanical and speeded 8-1/500sec. The f/2.8 Rikenon lens closes down to f/16 and focuses to 0.9m. The lens is coupled to a coincident image rangefinder in the viewfinder, which springs into action as the focusing ring is turned.

Exposures can be set manually, but turn the aperture scale to its 'A' setting and you get shutter priority automation, with auto-selected apertures displayed in the viewfinder, courtesy of an in-built CdS meter powered by a 1.3-volt mercury cell. A battery-check button, delayed action lever and multi-exposure control complete the specification.

What makes the 500ME different from its contemporaries is the SP-Winder, which is now



Removed from the camera, the power winder with the clockwork winding crank folded out from the base

rarer than the camera. Like most power winders, it screws into the tripod bush and makes a connection to the film wind mechanism via the base plate. Unlike other power winders, it works by clockwork. A full wind of the motor, using the fold-out crank, gives enough power to wind 10 frames.

Today we talk about cameras of the past being a bit retro, but the

The 500ME from the top, showing the shutter speed, aperture and focusing scales around the lens

Ricoh 500ME was already retro on the day it was launched.

What's good Manual or automatic exposure, mechanical operation if the battery fails, power wind without batteries.

What's bad Aperture setting ring very narrow and fiddly, central rangefinder image small and difficult to read.

Contact

Amateur Photographer, Time Inc (UK) Ltd,
Pinehurst 2, Pinehurst Road, Farnborough,
Hampshire GU14 7BF
Telephone 01252 555 213
Email ap@timeinc.com
Picture returns: telephone 01252 555 378
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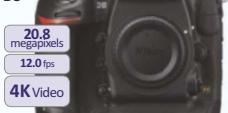


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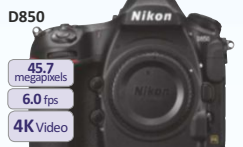
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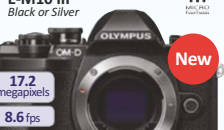


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6D Mark II + 24-105mm £1558 inc. £170 Cashback*
6D Mark II + 24-105mm £2079
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Canon | PRO PARTNER
EOS 5DS R

50.6 megapixels
5.0 fps
1080p movie mode
Full Frame CMOS sensor

5DS R Body £3449

5DS R Body £3449
5DS Body £3199 inc. £250 Cashback*
5DS Body £3099

Canon | PRO PARTNER
EOS 1D X Mark II

20.2 megapixels
16.0 fps
Full Frame CMOS sensor

1D X Mark II Body £5429

1D X Mark II Body £5429

*Canon Cashback ends 15.05.18

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Gorillapod Kit 1K£52
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<p>Canon PRO PARTNER Speedlites:</p> <p>470EX AI £499 600EX II-RT £689 430EX III-RT £344</p>	<p>Macrolites:</p> <p>MR-14EX II £739</p>	<p>Nikon Speedlights:</p> <p>SB-5000 £499 SB-700 £259</p>	<p>Kits:</p> <p>R1 Close-Up £439 R1C1 £629</p>	<p>SONY Flashguns:</p> <p>HVL-F43M £249 HVL-F60RM £619</p>	<p>OLYMPUS Flashguns:</p> <p>FL-300R £134.99 FL-600R £279</p>	<p>PERLIT Flashguns:</p> <p>AF 540 FGZ II AF 360FGZ II £349 £499</p>
<p>Macro flash:</p> <p>44 AF-2 £169 M400 £239 52 AF-1 £209 64 AF-1 £309</p>	<p>SIGMA Flashguns:</p> <p>EF 610 DG ST £109 EF 610 DG Super £169</p>	<p>Nissin Flashguns:</p> <p>EM-140 DG Macro Flash £329 i40 £159 i60A £239</p>	<p>SEKONIC</p> <p>Sekonic L-308S £150 Pro L478DR £389 Speedmaster L-858D £600</p>			
<p>PocketWizard</p> <p>MiniTT1 £165 FlexTT5 £199 Plus III Set £229 PlusX Set £149</p>	<p>3m Background Support £99</p>	<p>FlashBender2 XL Pro Lighting System £94.99</p>	<p>INTERFIT</p> <p>Wall Mounting Kit £61.99 Folding Softbox From £49 Reflector Bracket £28.99</p>			
<p>westcott</p> <p>Omega Reflector £119 Collapsible Umbrella Flash Kit £109</p>	<p>Lastolite</p> <p>Ezybox Speed-Lite 2 £47 Ezybox Hotshoe From £117 EzyBalance Grey/White £22</p>	<p>Background Support £139 TriFlip Kits From £71 Urban Collapsible £163</p>	<p>Reflectors: 50cm £24 75cm £39 95cm £62 120cm £76</p> <p>Off Camera Flash Cord £33 Tilthead bracket £26</p>			

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DSLR Lenses



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EF 35mm f2 IS USM	£519
EF-S 35mm f2.8 Macro IS STM	£369
EF 40mm f2.8 STM	£199
EF 50mm f1.2L USM	£1339
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EF 50mm f1.4 USM	£384
EF 50mm f1.8 STM	£119
TS-E 50mm f2.8L Macro	£2199
EF-S 60mm f2.8 USM Macro	£439
EF 85mm f1.2L II USM	£1929
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EF 85mm f1.4L IS USM	£1379
EF 85mm f1.8 USM	£414
TS-E 90mm f2.8L Macro	£2199
EF 100mm f2.8 USM Macro	£519
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EF 100mm f2.8L Macro IS USM	£899
EF 135mm f4.0 L Macro	£2199
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EF-S 10-18mm f4.5-5.6 IS STM	£239
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EF 11-24mm f4L USM	£2789
EF-S 15-85mm f3.5-5.6 IS USM	£689
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EF 16-35mm f4L IS USM	£999
EF-S 18-55mm f3.5-5.6 IS STM	£214

EF-S 18-135mm f3.5-5.6 IS STM	£429
EF-S 18-200mm f3.5-5.6 IS	£499
EF 24-70mm f2.8L IS USM II	£1739
£1519 inc. £220 Cashback*	
EF 24-70mm f4L IS USM	£799
EF 24-105mm f3.5-5.6 IS STM	£414
EF 24-105mm f4L IS II USM	£1029
EF 28-300mm f3.5-5.6 L IS USM	£2289
EF-S 55-250mm f4.5-6.3 IS STM	£299
EF 70-200mm f2.8 L IS USM II	£1979
£1759 inc. £220 Cashback*	
EF 70-200mm f4L IS USM	£1209
EF 70-300mm f4.0-5.6 L IS USM	£1249
£1099 inc. £150 Cashback*	
EF 100-400mm f4.5-5.6L IS USM II	£2049



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14mm f2.8 D AF ED	£1479
20mm f1.8 G AF-S ED	£699
24mm f1.4 G AF-S ED	£1899
24mm f1.8 G AF-S ED	£679
28mm f1.8 G AF-S	£599
35mm f1.8 G ED AF-S	£479
40mm f2.8 G AF-S DX Micro	£259
45mm f2.8 G IF-ED AF DX Fisheye	£1539
50mm f1.4 G AF-S	£415
58mm f1.4 G AF-S	£1459
60mm f2.8 D AF Micro	£429
85mm f1.8 G AF-S	£529
85mm f1.8 G AF-S	£469
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135mm f2.0 D AF DC	£1199

180mm f2.8 D AF IF-ED	£799
300mm f4.0E AF-S PF ED VR	£1599
500mm f4.0E FL AF-S ED VR	£8999
600mm f4.0E FL AF-S ED VR	£10999
10-24mm f3.5-4.5 G AF-S DX	£769
16-80mm f2.8-4E ED AF-S DX VR	£909
16-85mm f3.5-5.6 G ED AF-S DX VR	£629
17-55mm f2.8 G ED DX AF-S IF	£1389
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18-300mm f3.6-6.3 C DC Macro OS HSM	£369
24-35mm f2 DG HSM A	£759
24-70mm f2.8 DG OS HSM	£1399
50-100mm f1.8 DC HSM Art	£949
70-200mm f2.8 EX DG OS HSM	£819
100-400mm f5.6-6.3 DG OS HSM	£699
120-300mm f2.8 OS	£2699
150-600mm f5.0-6.3 S DG OS HSM	£1329
150-600mm f5.6-6.3 C DG OS HSM	£789

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35mm f1.8 SP Di VC USD	£599
45mm f1.8 SP Di VC USD	£599
85mm f1.8 SP Di VC USD	£749
90mm f2.8 SP Di VC USD	£579
10-24mm f3.5-4.5 Di II LD SP AF ASP IF	£419
15-30mm f2.8 SP Di VC USD	£929
16-300mm f5.6-6.3 Di II VC PZD Macro	£429
18-200mm f3.5-6.3 Di II VC	£189
18-270mm f3.5-6.3 Di II VC PZD	£299
18-400mm f3.5-6.3 Di II VC HLD	£649
24-70mm f2.8 Di VC USD G2	£1249
28-300mm f3.5-6.3 Di VC PZD	£649
70-200mm f2.8 Di VC USD	£999
70-200mm f2.8 Di VC USD G2	£1349
70-300mm f4.5-5.6 SP Di VC USD	£329
100-400mm f4.5-6.3 Di VC USD	£789
150-600mm f5.6-6.3 SP Di VC USD	£739
150-600mm f5.6-6.3 VC USD G2	£1129

SIGMA

SIGMA LENSES - with 3 Year Manufacturer Warranty

14mm f1.8 DG HSM	£1679
20mm f1.4 DG HSM Art	£699
24mm f1.4 DG HSM	£649
30mm f1.4 DC HSM	£359
35mm f1.4 DG HSM	£599
85mm f1.4 Art DG HSM	£999
105mm f2.8 APO DG OS HSM Macro	£359
150mm f2.8 EX DG OS HSM Macro	£779
8-16mm f4.5-5.6 DC HSM	£599

Photo Bags & Rucksacks



Pro runner BP 350 AW II Backpack	Flipside 300 AW II
	
<p>Purpose-built to organise and protect more gear, and provide more options for manoeuvring in busy airports and crowded streets.</p> <p>Pro Runner: BP 350 AW II £199 BP 450 AW II £199</p>	<p>• DSLR, with up to 70-200 mm attached lens, or compact drone • 2 extra lenses • Compact tripod • 7" tablet</p> <p>Flipside: 300 AW II £112 400 AW II £155</p>



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Anvil Slim Professional Backpack

<p>Anvil: Anvil Slim £122 Anvil Super £134 Anvil Pro £126</p>

Billingham

Hadley Pro Original Khaki

<p>Canvas/Leather: Khaki, Black Fibre/Nylon/Leather: Khaki, Sage, Black Digital £119 Small £149 Large £154 Pro Original £189 Hadley One £265</p>

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	<p>PixMA Pro 100S £359 £309 inc. £50 Cashback* PixMA Pro 10S £499 £424 inc. £75 Cashback* ImagePROGRAF PRO-1000 £979 £879 inc. £100 Cashback*</p>
	<p>Datacolor Spyder 5 Pro £139 i1 Display Pro £178 ColorMunki Smile £90</p>
	<p>Intuos Pro Professional Pen and Touch Tablet Small £184 Medium £313 Large £429</p>

*Canon Cashback ends 15.05.18

Digital Compact Cameras

Digital compact camera accessories are available on our website




<p>20.2 megapixels 4.2x optical zoom 1080p movie mode</p> <p>PowerShot G5 X £649</p>


<p>20.1 megapixels 4.2x optical zoom 1080p movie mode</p> <p>PowerShot G7 X Mark II £539</p>


<p>12.8 megapixels 5.0x optical zoom 1080p movie mode</p> <p>PowerShot G1 X Mark II Premium Kit £669</p>

IXUS 185 HS	£99
IXUS 285 HS	£159
PowerShot SX60 HS	£369
PowerShot SX620 HS	£179
PowerShot SX730 HS	£329
PowerShot G9 X II	£399
PowerShot G1 X III	£1149
PowerShot G3 X	£729




<p>24.3 megapixels 1080 movie mode</p> <p>X100F £1199</p>

Panasonic Black or Silver

		
<p>12.8 megapixel</p> <p>Lumix LX100 £499</p>	<p>20.1 megapixels</p> <p>Lumix TZ200 £729</p>	<p>20.1 megapixels</p> <p>Lumix DMC-LX15 £518</p>

Lumix FZ1000	£568
Lumix TZ70	£219
Lumix TZ80	£279
Lumix FZ2000	£899
Lumix TZ90	£329
Lumix FZ82	£329

OLYMPUS


<p>4K movie mode</p> <p>Stylus TG-5 £379</p>

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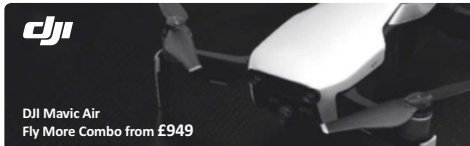
	
<p>16 megapixels</p> <p>Ricoh WG-50 £249</p>	<p>Theta V Digital Spherical Camera 4K movie mode and 360° stills £399</p>

	
<p>Theta S Digital Spherical Camera 12 Megapixels with 1080p movie mode and 360° stills £199</p>	<p>Theta SC Digital Spherical Camera - White 360° stills with 8GB internal storage, lithium ion battery, iOS and Android supported £189</p>

SONY

		
<p>18.2 megapixels 30.0x optical zoom</p> <p>Cyber-Shot HX90V £319</p>	<p>20.1 megapixels</p> <p>Cyber-Shot RX10 Mark IV £1799</p>	<p>20 megapixels</p> <p>Cyber-Shot RX100 Mark V £949</p>


<p>16 megapixels</p> <p>Coolpix W300 £389</p>





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14mm F2.8 XF.....	E++ £479 - £499
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18-135mm F3.5-5.6 LM OIS WR XF.....	E++ £529
18-55mm F2.8-4 R LM OIS XF.E++ / Mint- £299 - £349	
18mm F2 XF R.....	E++ £249
23mm F1.4 XF R.....	E++ £589
23mm F1.4 XF R.....	E++ £549
35mm F1.4 XF R.....	E++ £349
50-140mm F2.8 WR OIS XF.....	Mint- £999
50-230mm F4.5-6.7 OIS XC - Black.....	E++ £239
55-200mm F3.5-4.8 OIS XF.....	E++ £429

Olympus 4/3rds Lenses

7-14mm F4 ED Zuiko.....	E++ £459
9-18mm F4.5-6 ED Zuiko.....	E+ / Mint £199 - £275
14-42mm F3.5-6.3 ED Zuiko.....	E+ / E++ £35 - £49
14-54mm F2.8-3.5 Zuiko.....	E- £129
18-180mm F3.5-6.3 Zuiko.....	E++ £179
25mm F2.8 Zuiko.....	E- £119
40-150mm F3.5-4.5 Zuiko.....	E++ £59
40-150mm F4-5.6 ED Zuiko.....	E+ / E++ £39 - £49
50-200mm F2.8-3.5 SWD.....	E++ £369
70-300mm F4-5.6 ED Zuiko.....	E++ £199
EC14 Tele Converter.....	E- £149
EC20 2x Tele Converter.....	E++ £199
EX25 Extension Tube.....	E++ / Mint- £49 - £59

Olympus Micro 4/3rds Lenses

12-40mm F2.8 M.Zuiko.....	E++ £499 - £529
12-50mm F3.5-6.3 ED M.Zuiko.....	E++ £139
12-50mm F3.5-6.3 M.Zuiko.....	Mint- £139
12mm F2 ED M.Zuiko.....	E+ / E++ £379 - £429
12mm F2 ED M.Zuiko - Silver.....	Mint- £249
14-42mm F3.5-5.6 EZ M.Zuiko.....	E++ / Mint- £139
14-42mm F3.5-5.6 M.Zuiko II R.....	E++ £75 - £79
15mm F8 Body Cap Lens.....	E++ £45
17mm F1.8 M.Zuiko - Black.....	Mint- £269
25mm F1.8 M.Zuiko - Silver.....	Mint- £219
40-150mm F2.8 M.Zuiko Pro.....	E++ £879 - £899
40-150mm F4-5.6 R ED M.Zuiko.....	Mint- £189
45mm F1.8 M.Zuiko.....	E++ £149
75mm F1.8 ED Black M.Zuiko.....	Mint- £489 - £499
75mm F1.8 ED Silver M.Zuiko.....	Mint- £489

Sony E Lenses

12mm F2 NCS.....	Mint- £219
16-50mm F3.5-5.6 PZ OSS.....	Mint- £89
16-70mm F4 ZA OSS.....	E++ £549
18-200mm F3.5-6.3 OSS.....	E++ £399
24-70mm F4 FE ZA OSS.....	E+ / E++ £549 - £669
24mm F1.4 ED AS UMC.....	E++ £279
24mm F3.5 Tilt-Shift ED FE Samyang.....	Mint- £529
28-70mm F3.5-5.6 FE OSS.....	E+ / Mint- £199 - £239
28mm F2 FE.....	Mint- £299
50mm F1.2 AS UMC CS Samyang.....	Mint- £199
50mm FE F1.4 ZA Planar T*.....	Mint- £1,149
85mm F1.4 FE GM.....	Mint- £1,249
85mm F1.8 FE.....	Mint- £479
100mm F2.8 FE STM GM OSS.....	Mint- £1,289

Canon EOS Lenses

8-15mm F4 L Fisheye USM.....	E++ £889
10-22mm F3.5-4.5 EFS.....	E+ / E++ £259 - £279
11-22mm EFM F4.5-6 IS STM.....	E++ £209
11-24mm F4 L USM.....	E++ £2,139
14mm F2.8 L USM II.....	E+ / E++ £849 - £929
15-45mm F3.5-6.3 IS STM EF-M.....	Mint- £149
16-35mm F2.8 L USM.....	E++ £549
16-35mm F4 L IS USM.....	E++ / Mint- £639 - £679
17-40mm F4 L USM.....	E+ / E++ £379 - £419
18-135mm F3.5-5.6 IS STM.....	E++ £239
18-200mm F3.5-5.6 IS EFS.....	E- £239
18-55mm F3.5-5.6 EFS II.....	E++ £449
18-55mm F3.5-5.6 EFS IS.....	E- £69
180mm F3.5 EF L Macro USM.....	E++ £899
20mm F2.8 USM.....	E++ £249
24-105mm F4 L IS USM.....	E++ £399 - £449
24-70mm F2.8 L USM II.....	E+ / Mint- £1,099 - £1,149
24-70mm F4 L IS USM.....	E- £549
24-85mm F3.5-4.5 USM.....	E- £99
24mm F1.4 L USM MKII.....	E++ / Mint- £989 - £1,049
24mm F3.5 L TSE MKII.....	E++ £1,189
28-105mm F3.5-4.5 USM.....	E- £1,189
28-135mm F3.5-5.6 IS USM.....	Unknown £79
28-80mm F2.8-4 L USM.....	E- £239
28-80mm F3.5-5.6 EF.....	E++ £49

28-80mm F3.5-5.6 EFII.....	E+ £35
35-135mm F3.3-4.5 Vario Sonnar.....	E++ £349
35mm F1.4 L USM.....	E++ £749
40mm F2.8 STM.....	Mint- £109
50mm F1.4 USM.....	E++ £179
50mm F1.8 EF Mk1.....	E- £119
50mm F1.8 STM.....	E++ £79
55-250mm F4-5.6 EFS IS.....	E- £79
60mm F2.8 EFS Macro.....	Mint- £279
60mm F2.8 Macro USM EFS.....	E++ / Mint- £219 - £279
70-200mm F2.8 L IS USM II.....	Mint- £1,359
70-200mm F4 L IS USM.....	E++ £639 - £689
70-200mm F4 L USM.....	E++ £299 - £339
70-210mm F3.5-4.5 USM.....	E++ £99
70-300mm F4-5.6 IS II USM.....	Mint- £359
70-300mm F4-5.6 IS USM.....	E+ / Mint- £199 - £229
70-300mm F4-5.6 L IS USM.....	E- £679
85mm F1.2 L USM.....	E++ £749
85mm F1.2 L USM MkII.....	E++ / Mint- £1,099 - £1,199
90mm F2.8 Tilt-Shift Lens.....	E+ / E++ £699 - £789
100-300mm F4.5-5.6 USM.....	E- £79
100-400mm F4.5-5.6 L IS USM.....	E+ / E++ £599 - £679
100mm F2.8 EF Macro.....	Unknown £129
100mm F2.8 USM Macro.....	E++ £529
135mm F2 L USM.....	E++ £599
200-400mm F4 L IS USM with Internal 1.4x Extender Lens.....	E++ £839
200mm F1.8 L USM.....	Unknown £1,549
200mm F2.8 L USM II.....	E++ £429 - £449
300mm F2.8 L IS USM.....	E+ / E++ £2,479
300mm F2.8 L IS USM MKII.....	E++ £4,249
300mm F2.8 L USM.....	Exc £895
300mm F4 L IS USM.....	E- £549
400mm F2.8 L USM.....	E- £2,449
400mm F4 DO IS USM.....	E+ / E++ £2,149 - £2,299
400mm F5.6 L USM.....	E- £639
500mm f4 L IS USM MKII.....	E+ £5,950
500mm F4.5 L USM.....	E- £2,149

Sigma - Canon EOS Fit

18-35mm F3.5-4.5 AF.....	Unused £49
18-50mm F2.8-4.5 DC OS HSM.....	E- £119
20mm F1.8 EX DG.....	E++ £249
24-60mm F2.8 EX DG.....	E++ £149
50mm F1.4 EX DG HSM.....	E++ £219
50mm F2.8 EX DG Macro.....	E++ £149
70-210mm F3.5-4.5 Apo.....	E++ £29
150-600mm F5-6.3 DG OS HSM Sport.....	E++ £999
150mm F2.8 EX DG Macro HSM.....	E++ £249
170-500mm F5-6.3 Apo.....	E- £159
180mm F3.5 EX Macro APO.....	E++ £299
300mm F2.8 APO DG HSM.....	E++ £1,149
400mm F5.6 AF.....	E- £99
500mm F7.2 Apo.....	E+ £129
600mm F8 Reflex.....	E- £179
800mm F5.6 APO EX DG HSM.....	E++ £3,499

Contax SLR Lenses

25mm F2.8 MM.....	E++ £349
28-70mm F3.5-4.5 MM.....	E++ / Mint- £249 - £279
28-80mm F3.5-5.6 AF.....	Unused / New £349 - £399
50mm F1.4 AF.....	E++ £449
50mm F1.4 MM.....	E++ £249
50mm F1.7 MM.....	E++ £129 - £149
50mm F2 ML Yashica.....	E++ £25
70-300mm F4-5.6 AF.....	E++ / Unused £349 - £649
100mm F2 AE.....	E- £599
135mm F2 (60 Year Edition).....	Unused £2,379
135mm F2.8 AE.....	E+ / E++ £149 - £229
135mm F2.8 DSB Yashica.....	E++ £39
135mm F2.8 MM.....	E- £169
180mm F2.5 SP Tamron.....	E- £249
180mm F2.8 AE.....	E++ / Unused £349 - £549
200mm F3.5 AE.....	E+ / E++ £129 - £149
200mm F4 AE.....	E++ / Unused £159 - £449
300mm F4 MM.....	E++ £299

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Fujifilm X-Pro2 Body + MHG-XPro2 Grip.....	E++ / Mint- £1,089
X-Pro2 Body Only.....	E++ £1,199
X-T1 Body + Meike Grip.....	E++ £439
X-T1 Body + Vertical Grip.....	E++ £489
X-T1 Body + Vertical Grip.....	E++ £489 - £499
X-T1 Body Only - Black.....	E- £419
X-T10 Black Body Only.....	E- £319
X-T20 Body Only - Black.....	Mint- £649
X-T20 Body Only - Silver.....	Mint- £649
X100F - Black.....	E++ / Mint- £1,049
X100F - Silver.....	E++ £1,049

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E-M1 Black Body Only.....	E+ / E++ £379 - £439
E-M1 Silver Body + HLD-7 Grip.....	E++ £479
E-P2 Black + 14-42mm.....	E++ £139
OMD E-M5 MKII Body Only - Black.....	Mint- £679
OMD E-M5 Silver Body Only.....	E- £229

Panasonic GH5 Body Only.....	E++ / Mint- £1,349 - £1,449
GH4 Body + Grip.....	E+ / E++ £579 - £699
G5 Body Only.....	E+ £125
GF-3 Black Body.....	E+ / E++ £69 - £79
GF-5 Body Only.....	E++ £79
GX7 Body Only.....	E++ £259
GX80 Body Only.....	Mint- £339 - £419

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A7 II Body + VG-C2EM Grip.....	Mint- £999
A7 II Body Only.....	Mint- £889
A7R II Body Only.....	E++ £1,649 - £1,749
A7S Body Only.....	Exc £849
A7S MkII Body Only.....	E++ / Mint- £1,969 - £2,099
A6000 Body Only.....	Mint- £289
A6500 Body Only.....	Mint- £1,049
NEX5 Body Only.....	E- £79

Digital SLR Cameras

Canon EOS 1000D Body Only.....	E+ £119
EOS 10D Body Only.....	As Seen £49
EOS 1D MkII Body Only.....	E- £249 - £279
EOS 1D MkIII Body Only.....	E- £399
EOS 1DX Body Only.....	Unknown £1,699
EOS 20D Body Only.....	E+ / E++ £79 - £89
EOS 350D Body Only.....	Exc / E++ £49 - £59
EOS 400D + BG-E3 Grip.....	E++ £99
EOS 40D + BG-E2N Grip.....	E+ £139
EOS 500D Body Only.....	E+ £119
EOS 5D MkII Body Only.....	E+ / E++ £599 - £689
EOS 5D MkIII Body Only.....	E+ £1,349 - £1,399
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D3 Body Only.....	E+ / E++ £749 - £799
D3000 Body Only.....	E++ £199
D3S Body Only.....	As Seen £769
D4 Body Only.....	E+ / E++ £1,849 - £2,189
D40X Body Only.....	Unknown / E+ £49 - £59
D4S Body Only.....	E++ £3,149 - £3,249
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D5100 Body Only.....	E+ £169
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50mm F2.8 EX DG Macro	E+ £129
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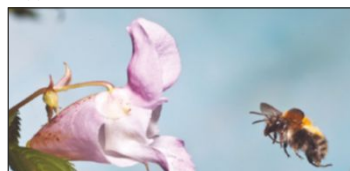
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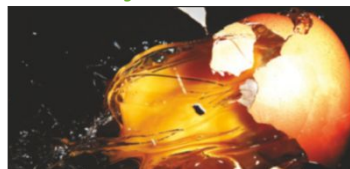
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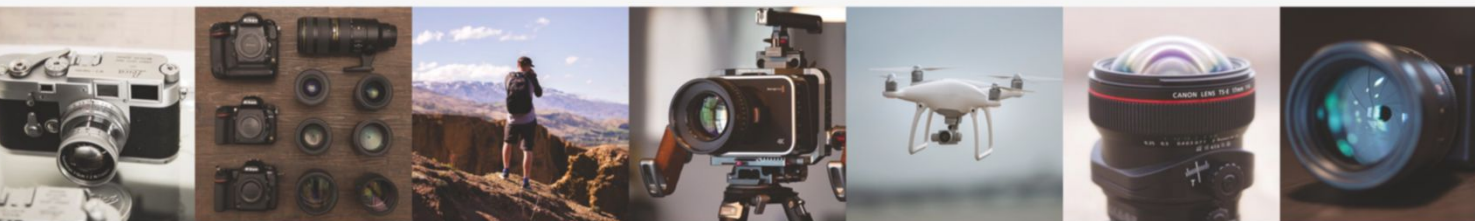


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Amateur Photographer



Final Analysis

Roger Hicks considers...

'Unidentified girl', c. 1861-1870, Unknown photographer

Almost certainly, there is nobody alive today who knows who took this picture, or exactly when, or who the little girl is (was). Even if she lived to well over 100, she must be long dead now. So why is it important?

Because, when we look at pictures from the past, it is all too easy to forget that these were people like us. As we are now, so once were they; as they are now, so shall we be. Let's try to go behind the eyes of this little girl – eyes which, if we stare into them, appear to be on the verge of tears.

Her clothes and jewellery suggest that she is in mourning; the necklace and armbands are improbably and rather badly picked out in gold on a tintype. Then we see the picture she holds on her lap. Another tintype: a man in the uniform of a soldier of the American Civil War. Very likely, her father.

We can't keep everything

How did she feel when this picture was taken? Was she called away from some game and told to sit still? How did her loss strike her? Whose idea was the picture? Her mother's? Grandmother's? Grandfather's? How old was she when he died? Did she remember him: his scratchy beard, his smell of tobacco, throwing her in the air and catching her? How did he die? Where? When? What did she do after the picture had been taken? Change from her mourning clothes to something everyday? Or sit and read the Bible with a stern aunt? What was she thinking? Put yourself in her place. At her age. In her time.

Then consider her future, not her past. Did she show her



fiancé this picture? The picture of her father that she holds? Did she live to have children and see grandchildren, great-grandchildren? Did she show them this picture?

Later, how was it separated from her family? It's a part of the Liljenquist Family Collection of Civil War Photographs, held by the US Library of Congress. The

Liljenquists presumably bought it. Where? When? How? Even these details, if they are not lost already, will be lost in the fullness of time.

This is from the dawn of mass portraiture; indeed, from the dawn of mass consumption. What will become of our own pictures, our own treasures, when we are gone? Unless they were

unusually rich, our great-great-grandparents had very little by modern standards. Mostly, they bought things to last, and got rid of them only when they wore out. The occasional photograph, and the family silver, if they had any, were hard-won exceptions. What is an heirloom, any more? We cannot keep everything from the past.

AP

Roger Hicks has been writing about photography since 1981 and has published more than three dozen books on the subject, many in partnership with his wife Frances Schultz (visit his new website at www.rogerandfrances.eu). Every week in this column Roger deconstructs a classic or contemporary photograph. Next week he considers an image by Alexander McIntosh Weir

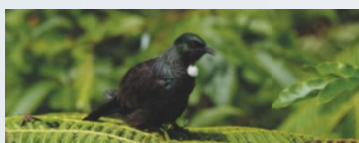


The Pentax K-1 Mark II coming soon to Park Cameras!

PENTAX K-1 II

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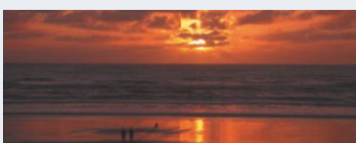
36.4 EFFECTIVE MEGAPIXELS AA-FILTER FREE DESIGN TO OPTIMIZE RESOLVING POWER

The PENTAX K-1 II features an anti-aliasing filter-free design to optimize image resolving power. This design produces true-to-life images by faithfully depicting the fine details of the subject. It retains excellent resolution, even when the image is cropped during shooting, or the captured image is trimmed during processing. It allows you to capture the decisive moment in a sharp, clear image.



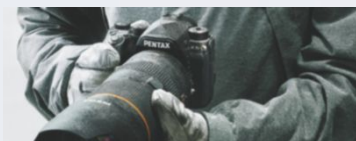
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D850

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I AM



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